The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 91, NO. 2 CHICAGO, ILLINOIS JULY 14, 1928

PATHOLOGIC SLEEP*

WALTER FREEMAN, M.D.
Senior Medical Officer, St. Elizabeth's Hospital
WASHINGTON, D. C.

A definition of sleep would have to include the features of rhythmicity, reversibility, selective and variable suppression of responses to incoming stimuli, and certain somatic and psychic activities that proceed on a plane below the threshold of what is termed consciousness. Sleep is differentiated from stupor and coma by the rapidity and completeness of the return to wakefulness; from catatonia and catalepsy by the flaccidity and quick response to stimuli, and from syncope by the evanescence and unexpectedness, as well as by the circulatory phenomena, of the latter.

Sleep has been utilized in psychoanalysis not only to reveal the patient's hidden complexes in the shape of dreams, but also as an example of the wish to return to the maternal uterus. The curled up posture assumed by the normal sleeping individual is supposed to resemble the fetal attitude.

Sleep is also interpreted as a death-wish, as an instinct, as a conditioned reflex, as an intoxication. The death-wish theory need not detain us. As an instinct, sleep would appear to be analogous to the instinct of birds in flying southward at the approach of winter, or in building nests before egg-laying time arrives. The feature of anticipation is strongly in evidence. According to Claperède, then, we sleep not because we are exhausted but in order to avoid becoming exhausted. Extreme exhaustion may even interfere with sleep.

Sleep as a conditioned reflex is sponsored by no less an authority than Pavlov himself. A conditioned reflex, it may be said, is one excited by an indifferent stimulus through the constant association of this particular stimulus with the giving of food. Pavlov found, as his researches indicate, that, following the exhibition of food to a hungry dog, there is an immediate outpouring of saliva. This is the direct or unconditioned reflex. If now the animal is fed each time after a bell of a certain pitch is rung, after the association has been formed there will be reflex salivation each time this particular bell is rung. This is the conditioned reflex, and numerous interesting problems have been attacked and solved by this means of approach. The whole problem of color discrimination and the recognition of shape and tone by the lower animals is involved, and Pavlov is even broadening his researches to include healthy babies.

During the course of his experiments the Russian investigator was often defeated in his efforts by having the animals go to sleep. In studying this phenomenon itself he discovered that, if the period between the conditioning stimulus and the giving of meat was lengthened, the dog, his attention focused closely on the next event, would go quietly to sleep, even though he had been starved for the preceding twenty-four hours. Moreover, the constant repetition of the conditioning stimulus without the exhibition of food would also provoke sleep.

Pavlov explains conditioned reflexes by assuming that the focusing of an excitation on one small area of the cerebral cortex leads to inhibition of other areas. Sleep, then, differs from such conditioned reflexes only in being a more extensive inhibition, spread over the whole cerebral cortex, and even to the subcortical centers.

This explanation does not wholly suffice. The formation of conditioned reflexes is dependent on the integrity of the cortex. When the cortex is injured, the reflexes are more difficult to build up; once the cortex is extirpated, conditioned reflexes can no longer be formed. Sleep, however, is observed to maintain a more or less typical rhythmicity even in decorticate animals; hence the mechanism of sleep is not entirely cortical and does not depend entirely on generalized cortical inhibition.

There is some evidence pointing to sleep as an intoxication. If an animal is kept awake for a prolonged period, not necessarily by heavy bodily exercise, it will readily sink into deep slumber after it has been released. Moreover, at the end of the experiment, if some blood or spinal fluid is withdrawn and injected into an animal that has previously rested or even slept, the recipient animal will very quickly manifest drowsiness similar to that of the donor. Muscular fatigue and exhaustion in the donor are not necessary to produce this result—merely prolonged wakefulness. The toxin of wakefulness and the toxin of fatigue seem to be different. This hypothetic hypnotoxin, according to the investigators, is diffusible, readily oxidized, and destroyed by heat. Its chemical nature is uncertain. It probably acts not so much by direct intoxication of cells as by arousing an inhibitory reflex.

Studies on the chemical condition of the blood during sleep have not revealed any significant deviations except in the concentrations of calcium and potassium, both of which are lowered. It is possible that these substances accumulate in the brain, especially in the vegetative centers.

* Read before the Medical Society of the District of Columbia, Feb. 15, 1928.

* Le Sommeil, normal et pathologique, was the subject of discussion at the VIII Reunion neurologique internationale in Paris, May 27-June 2, 1927, and the report is found in the Revue neurologique **1**:751, 1927. It was from this report that most of the data given in this paper were obtained. A good discussion of narcolepsy by W. J. Adie appeared in Brain **49**:257 (Sept.) 1926.

A SLEEP CENTER

Experiments on animals seem to show that there are two mechanisms concerned in the production of sleep, a cortical and a diencephalic. These two are probably synergistic, but sometimes they respond to different chemicals in different and striking ways. For instance, 0.25 mg. of calcium chloride injected into the neighborhood of the tuber cinereum will within a few seconds bring about a state giving all the appearance of natural sleep, and lasting from thirty to forty minutes. If, on the other hand, an equivalent dose of potassium chloride is injected, the animal becomes overactive. These effects are intensified in the decorticate animal. The bromides, paraldehyde, alcohol and amylene hydrate would seem to act particularly on the diencephalic mechanism, for their hypnotic effect is intensified in the decorticate animal. On the other hand, chloral hydrate, barbital, phenobarbital and other substances lose their hypnotic effect in the decorticate animal, thus indicating a predominant effect on the cerebral cortex. Scopolamine, even in large doses, does not have any effect on the intact cat or rabbit; but, if the cortex is destroyed, profound sleep may be induced by minimal doses. Here the cortex and diencephalon appear to be antagonistic, and this phenomenon may explain the variability of the response to scopolamine in man. An even more striking experiment is detailed by von Economo. If magnesium sulphate is administered to an intact and to a decorticate animal, both will sink into slumber. If now calcium chloride is injected, the sleep of the decorticate animal becomes profound, whereas the normal animal wakes with a start. Calcium salts would thus appear to have a very different effect on the mechanisms of the cortex and diencephalon, stimulating the one and depressing the other.

Morphine seems to depress both the cortical and the diencephalic centers.

The cerebral cortex does not have any definite "sleep center," but that in the diencephalon seems to be quite sharply localized. It lies between the optic chiasm and the mammillary bodies close to the floor of the third ventricle. This region of the brain is presumed to exercise neural control over many vegetative processes, such as thirst and hunger, the metabolism of sugar and of fat, and sexual maturation. The delivery of minimal quantities of certain chemicals into this region will bring about the condition in the experimental animal that is known as sleep. The muscle tone relaxes, the eyes are closed, breathing is slowed, the blood pressure falls; yet the condition is easily reversible, since the animal can be roused as from normal sleep by a noise, touch, or flash of light. The wakefulness lasts only a moment or two, and the animal yawns, stretches, and then sinks back into slumber, remaining so until the effect of the injection wears off.

PATHOLOGIC SLEEP

Pathologic somnolence may be more or less continuous, or it may be intermittent or occasional. The occasional attacks of sleep, termed narcolepsy, are of particular interest and will be considered later.

Continuous sleep is always symptomatic, indicating a definite anatomic lesion. It must not be supposed, however that this symptom indicates a lesion in any single location. Tumors in the most varied location, and diffuse processes such as encephalitis and trypanosomiasis, syphilis occasionally, and multiple sclerosis may give rise to a syndrome whose chief feature is a tendency to sleep continuously. Yet this sleep in the true cases is not to be confounded with coma, since the patient wakes readily from his slumber, attends to the wants of nature, converses with his entourage and may not even show confusion or bewilderment. Yet he is kept awake with great difficulty, and as soon as there is any let-down in the conversation he once more sinks back into slumber. He can be awakened a second time and will show himself as active mentally as at first, and this process may be repeated almost indefinitely; yet as soon as the interest or the activity flags he subsides into sleep. The condition may last for weeks or even for months. These patients are correctly oriented for place and person, but they have little or no idea of the passage of time and their dreams will seem very real to them; hence they will sometimes confabulate like Korsakoffians.

There is no part of the brain in which a tumor may arise without occasionally producing pathologic sleep as one of its symptoms. In a comparative study of this symptom in cases of cerebral neoplasm, however, one is struck by the frequency with which it is encountered in the deep infiltrating growths of the hemispheres, so much so as to warn the surgeon against too happy a prognosis before he makes his exploration. It is the tumors of the third ventricle, however, that are the greatest sleep producers. The symptom may escape the notice of the physician at first, since the patient is roused to meet the doctor; but if the family and the nurse are questioned as to sleeping they will almost certainly say that the patient sleeps on all possible occasions. Whether the tumor arises in the third ventricle itself or in the walls of the neighboring thalamus, or whether it pushes up from the region of the sella turcica below, sleep in abnormal amounts is almost uniformly present.

When sleep is present in cases of tumor in other locations, it usually comes as a late sign, when the general intraventricular and intracranial pressure is probably in some way interfering with the circulation in these diencephalic centers. In tumors of the region mentioned, sleep is precocious and persistent. Severe headache with striking somnolence should lead one to suspect the region of the tuber cinereum. Whether the process is inflammatory or neoplastic is for further study to determine.

Somnolence, continuous or intermittent, may be caused by inflammatory conditions at the base. Epidemic encephalitis in the early stages may give rise to sleep protracted over days or weeks; but, on the other hand, the reverse may be true or one may follow the other. Many patients have remarked, "Why do they call this the sleeping sickness when I haven't closed my eyes for a week?" It is true that in the early days of the epidemic when the disease was given its name, the lethargic type was particularly common, but lethargy is seen less frequently at present.

Syphilitic meningitis affecting the region of the tuber cinereum, or tuberculous meningitis of the interpeduncular spaces, may provoke a syndrome characterized by a strong tendency to sleep. This may be overlooked or assigned to some other cause. Sometimes the severity of the headache will render the patient dazed and quiet, and this symptom may be assigned to the severity of the pain. Pain elsewhere of sufficient severity, however, may provoke restlessness, jactitation and sometimes violent muscular movements.

Headache, on the other hand, is more likely to be associated with quiet, the patient fearing to move on account of the pain. Not infrequently if the patient

is questioned he will admit being in a sort of sleepy dreamy state, and may even describe hypnapagogic images like those normally encountered in the state between waking and sleeping.

A differential diagnosis between this sort of hypersomnia and that induced by suggestion or by pithiatism (hysteria) is usually possible by ascertaining the antecedents of the condition, and by recognition of the associated manifestations. The suggestibility of the pithiatic person is often very marked in this somnambulent state, and under suggestion he will perform acts that would be utterly foreign to the nature of the organic slumberer. Moreover, it may be reiterated that the somnolence of organic origin is readily reversible, and that momentarily the patient may be roused and can maintain an intelligent conversation, only sinking back into slumber when the constant stimulation is terminated or the interest flags.

NARCOLEPSY

There is a syndrome characterized by paroxysmal attacks of sleep to which the term narcolepsy is given. It may occur without any recognizable cause, when it is termed idiopathic, or it may occur in the course of other diseases, notably as a sequel to acute encephalitis. This condition, first described in detail by Gelinau, is not particularly rare and will probably be recognized more frequently in the future as more and more cases of encephalitis accrue. In the idiopathic form it may also be the sequel to an unrecognized attack of encephalitis.

The disease affects males predominantly and is often the cause of considerable embarrassment and unemployment. A college student went to sleep in every class, no matter how much he was interested in the subject. He would sit in the front row, immediately under the speaker's rostrum, pinching himself in order to keep awake. Yet at certain periods it would be utterly impossible for him to avoid going to sleep. He was ridiculed by his classmates, and gained the enmity of the professors. A colored man had an attack while driving a delivery truck and woke up with a start to find the machine just grazing another car. A third patient was repeatedly beaten by his father because he "went to sleep on the job."

Now, going to sleep during a lecture, or while driving a car, or even "going to sleep on the job" is not necessarily a pathologic manifestation. Any one may occasionally be guilty of such infraction of self-discipline, as a result of fatigue; but when the condition repeats itself at frequent intervals, or when it comes on during acts such as eating, or carrying on a conversation, or under tense emotional strain, and without previous loss of sleep, the boundaries of the normal are overstepped, and it is to this syndrome that the name narcolepsy is given.

The patient describes his attack as initiated by heaviness and smarting of the eyelids, together with a feeling of utter weariness demanding sleep. It is especially liable to develop when the body is in a relaxed posture, but sometimes comes on during walking or hard manual labor. It may be fought off for a period, but the demand becomes more and more insistent until the subject must lie down; otherwise he will go to sleep standing up and fall. The eyes close, the limbs relax, breathing becomes slowed, the face is calm and pale. There is no muscular twitching suggesting the petit mal attack. A touch on the shoulder may wake the patient as from any other doze. If his name is called or even if a remark is made that concerns him, he may open his eyes and be in immediate control of his faculties. Some patients find it advisable to give in to the desire immediately, since if it is fought off for a period the duration of sleep is prolonged and headache supervenes. Others can successfully resist the advent of sleep by undertaking some physical activity, such as walking or performing setting-up exercises. The severity of the condition varies greatly from case to case.

The duration of the attack may be only a few seconds, or it may be a matter of half an hour. Usually from five to fifteen minutes is sufficient to see the passing of the attack. The patient wakes quietly, in full possession of his faculties, and resumes his occupation as though nothing had happened. The attacks may occur at fairly regular intervals, especially after eating, but they are apt to be irregular. As many as twenty attacks in a day is rather unusual. The onset of the paroxysm is usually quite sudden, but delayed long enough so that the sufferer may find a place to rest himself. Accidents are surprisingly infrequent in view of the sudden imperious desire to sleep.

Associated with narcolepsy, one frequently observes cataplectic attacks. These are usually precipitated by emotional outbursts. The student schooled himself to keep from laughing, and was very successful considering the determined efforts of his fraternity brothers, who knew his weakness and imposed on it. During a spell of laughter this patient would feel himself falling from uncontrollable weakness. If he held a glass or a book in his hand, this fell to the floor from his powerless fingers, and he collapsed, usually into a chair. He was not able in any way to prevent the cataplectic attack when he laughed, so he trained himself not to show any emotion.

During the cataleptic attack there is complete dissolution of tonus in the muscles, and the person, if unsupported, will fall to the ground. There is absolutely no disturbance in consciousness. Other physiologic phenomena have not been investigated.

The association of narcolepsy with cataplectic attacks, the effect of emotional outbursts on the centers for muscular tone, the relation between emotion and sleep—all these are of interest to the psychologist; to the neurophysiologist they yet remain unexplained observations.

In some cases of narcolepsy there is no known cause, although in no "idiopathic" case has there been complete anatomic examination of the nervous system. The patients may not present any signs whatever of injury to the nervous system. The syndrome is observed in cases of chronic encephalitis, and occasionally in cases of syphilis or multiple sclerosis. Sometimes it occurs in association with other disturbances that point to the diencephalon as the location of the morbid process. One of the patients already mentioned has diabetes insipidus. Cases of obesity and infantilism have been reported in association with narcolepsy, probably the best known example being the fat boy in Pickwick. In him the Froelich syndrome was also associated with narcoleptic attacks, for the boy went to sleep on every possible occasion. Dickens must have painted him from life.

Though syphilis, multiple sclerosis and encephalitis are diffuse processes, and though the pathology of idiopathic narcolepsy is not known, focal lesions in the region of the infundibulum may give rise to paroxysmal attacks of sleep, sometimes associated with cataplexy, thus indicating the location of the pathologic disturbance in narcolepsy.

Narcolepsy is most frequently confused with the petit mal attacks of epilepsy, and was once even thought to be a form of epilepsy; hence the suffix. But whereas petit mal attacks are liable to develop into grand mal attacks, narcolepsy never does so. The concurrence of narcolepsy and epilepsy is doubtful. The differential features of the two conditions may be found in the apparently normal sleep, as against the period of unconsciousness with following confusion. The patient in the narcoleptic attack is aroused as easily as from normal sleep, whereas the epileptic patient must wait until recovery. The whole mechanism is probably different, though superficially there are resemblances. The cataplectic attacks should furnish an immediate distinguishing feature, but these are not always present.

Narcolepsy is very resistant to treatment and may continue over years without showing any amelioration from the exhibition of pharmaceutic or biologic preparations, although the recent experiments of Demole indicate that the time is approaching when some advance may be expected. In mild or moderate cases much may be accomplished by ordering the life of the individual so that the imperious need for sleep may be assuaged or even anticipated. The college boy improved when he slept after lunch and again after dinner, exercised in the middle of the evening, and slept less at night. The employer of the truck driver shifted his man to a different job and noted that the employee's efficiency did not suffer in the intervals between his attacks. Quick submission to the attacks may shorten their duration, or in some instances bodily activity will inhibit them. Moderate doses of thyroxin seemed to help one patient who was intolerant to hypophysial extract.

CONCLUSIONS

Finally, then, sleep is the product of widespread cortical inhibition, probably the effect of some hypnotoxin that may be found in the blood and spinal fluid during states of prolonged wakefulness. In addition, there is a sleep center in the region of the floor of the third ventricle which is acted on very powerfully by various chemical ions, as well as by inflammatory and neoplastic processes in the vicinity and by a generalized increased intracranial pressure.[1] Prolonged sleep, arising precociously in the course of an intracranial disease, suggests the involvement of the infundibular area. Narcolepsy, sometimes associated with cataplectic attacks, may occur in the course of encephalitis or other malady, or it may be observed without known cause. The associated symptoms point to the tuber cinereum as the location of the disordered physiology, and focal lesions in this area have provoked symptomatic narcolepsy. Somnolence appearing in the course of suspected cerebral tumor is a *signum mali ominis*, for if it is precocious it points to an area that is difficult of access surgically and if it is late it indicates intracranial hypertension or a deep infiltrating growth. Somnolence is always symptomatic, whereas narcolepsy, although it may appear as the result of local organic disease, is often unaccompanied by any other disorder, and may present the criteria of an idiopathic disease. It is consistent with a fairly useful life, and does not incapacitate the individual. The treatment of somnolence is that of the provocative condition, and as a symptom it may be disregarded. Since narcolepsy may occur without known cause, treatment can only be symptomatic and the condition may prove very rebellious to any treatment. Potent glandular extracts are suggested as the least unpromising.

THE WORK OF THE AMERICAN BOARD OF OTOLARYNGOLOGY

ITS INFLUENCE IN RAISING THE STANDARDS OF THE SPECIALTY *

FRANK R. SPENCER, M.D.
BOULDER, COLO.

Let us consider for a moment the training of otolaryngologists, prior to our present-day standards, in order that we may view the past, compare it with the present, and visualize the future of our specialty.

Those who began the practice of otolaryngology from twenty to thirty years ago usually obtained their training by taking courses of from six weeks to three months in some one of our large cities. A very few went abroad. Little attention was given to the study of the anatomy, histology, embryology, physiology or the gross and microscopic pathology of the ears, nose and throat. Relatively few physicians began the practice of our specialty immediately after completing a general internship; the majority devoted several years to general practice as preparation for the special. When they gave up general practice, only too frequently they took a six weeks' course and began to limit their practice to otolaryngology.

Today, the majority of those graduates who contemplate special practice begin the study of otolaryngology either immediately after graduation or, what is better, after completing a general internship. During recent years, more and more physicians have spent six months or a year, and sometimes two or more years, studying in this country or abroad, after completing a general internship, before entering special practice. Many have been well trained in the basic sciences as these pertain to our specialty. By work in an outpatient clinic of a large teaching hospital, or with a position as an assistant in the private office of a well established otolaryngologist, or with these two combined, young physicians have been enabled to obtain excellent training in preparation for their life's work.

The necessity for higher standards in the future has been recognized for many years. However, it remained for Dr. George E. Shambaugh of Chicago to formulate the plans. His persistent efforts resulted in the establishment of the American Board of Otolaryngology.

In the spring of 1924, the American Otological Society appointed as representatives Dr. T. H. Halstead of Syracuse, N. Y., and Dr. H. W. Loeb of St. Louis; Dr. H. P. Mosher of Boston and Dr. R. H. Skillern of Philadelphia were appointed by the American Laryngological Association; Dr. T. E. Carmody of Denver and Dr. W. P. Wherry of Omaha were appointed by the American Academy of Ophthalmology and Otolaryngology; Dr. J. C. Beck of Chicago and Dr. R. C. Lynch of New Orleans were appointed by the Section on Laryngology, Otology and Rhinology of the American Medical Association; and Dr. B. R. Shurly of Detroit and your chairman were appointed to represent the American Laryngological, Rhinological and Otological Society. These ten delegates formed a board representing the five American ear, nose and throat societies, which held its first meeting, for the purpose of organization, in Chicago at the University Club, Nov. 10, 1924.

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 13, 1928.

At this time the board formulated plans to hold an examination of applicants each spring just before the annual session of the American Medical Association and again each fall just prior to the meeting of the American Academy of Ophthalmology and Otolaryngology.

As a result, the first examination was conducted in Philadelphia in May, 1925, just prior to the annual session of the American Medical Association in Atlantic City. The next examination was conducted immediately before the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago in October, 1925. The third examination was held in Dallas, Texas, prior to the session of the American Medical Association in April, 1926. A week later the board met with the Pacific Coast Oto-Ophthalmological Society in San Francisco, to examine applicants at Stanford University Hospital. In June, 1926, an examination was given in Montreal in connection with the series of American ear, nose and throat societies meeting there. The following September, 1926, an examination was held at the University of Colorado General Hospital, in Denver, the first day of the meeting of the American Academy of Ophthalmology and Otolaryngology in Colorado Springs. In May, 1927, we examined applicants at Washington, D. C., just before the annual session of the American Medical Association. Early in June of 1927, an examination was given in Spokane, Wash., in connection with the Pacific Coast Oto-Ophthalmological Society. In September, 1927, the American Academy of Ophthalmology and Otolaryngology met in Detroit, and an examination was held there. In November, 1927, the board met with the Southern Medical Association at Memphis, Tenn., and conducted an examination at one of the Memphis hospitals. This series of examinations was arranged by the board to accommodate otolaryngologists in all sections of North America, as much as possible, and to encourage applicants to prepare properly to take the examinations.

To date, 1,261 otolaryngologists have been examined and 1,179 have received a certificate. The directory of the board contains a list of these. The percentage of failures has naturally varied from time to time but has not exceeded 17 per cent. The total number who have failed is seventy-six; and six are being held, either pending receipt of case histories or for investigation.

At first the board met with some opposition from a very few of the older but less well known otolaryngologists, who attend very few of the annual meetings of our societies. This opposition probably arose because they did not understand the purposes of the board. The friendly spirit of cooperation has predominated, however, so that the work of the board has been well received.

The fellows of the American Otological Society and of the American Laryngological Association were invited in the beginning to apply for a certificate. Almost all accepted the invitation, applied for a certificate, and were granted a certificate as otolaryngologists of high standing Most of the members of the American Laryngological, Rhinological and Otological Society and the older, well known members of the American Academy of Ophthalmology and Otolaryngology received the same invitation and accepted it by making application.

The previous training of applicants has been of considerable interest, because the best trained otolaryngologists have usually been applicants with the best college, best medical and best graduate training. Three general classes of applicants have been examined:

1. Those who have not had a college education but entered medical school directly from high school and did not have an internship.

2. Those who have had college training with or without an internship.

3. Those who have had excellent college training, the best medical training, an internship and excellent graduate training in otolaryngology. Class A medical schools of the highest type have furnished during recent years many of this last type of well trained otolaryngologists.

The immediate effect of the board's work has been to stimulate many to study more at home, and some to take a graduate course before making application. Among those who have failed, some have subsequently taken a thorough graduate course of many months, either in this country or abroad. When they have returned for a second examination their improvement has been very gratifying. We receive many requests for information about when and where to go for the best training. The board advises inquirers to write to the deans of our best graduate medical schools for detailed information.

In 1921 the Committee on Graduate Training [1] made a report, in which it said: [2]

> In a previous report on the minimum requirements essential in the preparation for special practice in otolaryngology (Graduate Training in Otolaryngology [3]), this committee recommended that a period of one full year be spent in securing a proper foundation for this work; that one half of this time be devoted to the study of the fundamental sciences in the laboratory of a university, and that the other half be devoted to the clinical study of cases, all of this work to be on the basis of real graduate training, in which the student does his work independently but under proper supervision, as distinguished from listening to didactic lectures or by attendance on clinics, watching others do the work. It was further stipulated that this first year's training be supplemented, so far as facilities exist, by serving as intern in hospitals devoted to the specialty or as resident in otolaryngology in a general hospital, and that when it is not feasible to secure such services, an additional six months be spent in a continuation of the first year's work or by serving as assistant in the practice of an established specialist. This additional six months may be spent by taking such special courses in otolaryngology as are offered in other medical centers, postgraduate schools, etc.
>
> In order to avoid confusion regarding this minimum requirement and what should be contemplated in a fully rounded out preparation, we submit the following summary of a report from the Committee on Graduate Training appointed by the three special societies, the American Laryngological Association, the American Otological Society and the American Laryngological, Rhinological and Otological Society:
>
> SUMMARY OF REPORT
>
> **1.** We recommend that students preparing for the practice of otolaryngology be graduates of class A medical schools and have completed a year's service as intern in an approved general hospital or its equivalent.

1. The members of this committee were: Wendell C. Phillips, M.D., New York, chairman; Herbert Stanley Birkett, M.D., dean and professor of otolaryngology, McGill University Faculty of Medicine, Montreal; Eugene A. Crockett, M.D.; Walter A. Lecompte, professor of otology, Medical School of Harvard University, Boston; Lee Wallace Dean, M.D., dean and professor of ophthalmology, otology and laryngology and oral surgery, State University of Iowa College of Medicine, Iowa City; John Marvin Ingersoll, M.D., associate professor of otology, rhinology and laryngology, Western Reserve University School of Medicine, Cleveland; Hanau W. Loeb, M.D., dean and professor of ear, nose and throat diseases, St. Louis University School of Medicine, St. Louis; John O. McReynolds, M.D., Dallas, Texas; Davis J. Gibb Wishart, M.D., professor of otolaryngology, University of Toronto Faculty of Medicine, Toronto; secretary, George Elmer Shambaugh, M.D., professor of laryngology and otology, Rush Medical College, Chicago.

2. Shambaugh, G. E.: Report of Committee on Graduate Training in Otolaryngology, J. A. M. A. **80**: 1333-1335 (May 5) 1923.

3. A. M. A. Bulletin, Jan. 15, 1921.

2. We recommend that, when possible, the preparation for special practice be started immediately after completion of this hospital year. We do not approve of specialization beginning during the undergraduate medical course, or in the intern year.

3. We recommend that the minimum training consist of eighteen months full-time work, the first year to be spent in one place. The last six months may be continued here or the work may be pursued in other approved centers. During the first year, one half of the time should be devoted to the clinical study of cases, the other half to the study of the fundamental sciences and to library work.

4. All of this work must be on the basis of genuine graduate instruction in which the student does his work individually under proper supervision.

5. The work in the fundamental sciences should be done in properly equipped laboratories, such as exist in all class A medical schools. The clinical work must be done in a properly equipped and properly organized outpatient department of either a class A school or a special hospital, the student serving as clinical assistant.

6. On the completion of the first year's fundamental training, the student is advised to secure, so far as this is possible, the position of intern in a special hospital, or of resident in otolaryngology in a general hospital.

7. For those students who are not able to secure suitable hospital positions after the completion of the first year's fundamental training, the remaining six months' work necessary to fill out the eighteen months' minimum requirement may be taken as a continuation of the first year's work in the same institution or by taking special work in other centers. Others may devote the last six months serving as assistant in the practice of some established specialist. When the latter alternatives are followed, the work selected must meet the approval of the institution in which the first year's work has been taken.

8. We recommend that on the completion of the foregoing requirements the student be granted a suitable certificate setting forth that he has had the proper preparation for taking up the practice of the specialty. This certificate is to be granted by the institution in which the first year's work has been taken. We make no recommendation regarding the granting of higher degrees. We feel satisfied that such degrees will be granted as readily by the university to those students preparing for the practice of otolaryngology as to students in any other field, whenever the work pursued meets the requirements established for the granting of such degrees.

9. We recommend that the student in otolaryngology devote three years, if possible, to the study of his specialty.

The committee hopes to be able to assist the candidates in the following ways:

(*a*) Securing from the graduate departments of the universities a suitable degree to be conferred only on such candidates as have followed the course outlined above.

(*b*) By correspondence with the graduate departments of the universities with a view to securing a uniformity in the course of study to be pursued.

(*c*) By arranging with the hospitals referred to above to limit their appointments, as interns, to those candidates possessing qualifications as outlined in the preceding.

(*d*) By preparing a list of hospitals to which candidates may safely be recommended to apply for the position of intern.

(*e*) By securing reliable information as to the facilities offered by various centers, which they may place at the disposal of those who desire to perfect themselves still further in any department of otolaryngology, after the foregoing course has been concluded.

It is not unreasonable to assume that in the future there will be many more better trained otolaryngologists than we have had in the past. The ideals of the board can be attained only by having all class A medical schools require two and preferably three years of college training leading to a degree at the end of the first or second medical year, and, in addition, a general internship of twelve, eighteen or twenty-four months before taking up graduate training in our specialty. Following this general internship, if one, two or three years can be spent in intensive training, under competent teachers, in anatomy, embryology, physiology, histology and gross and microscopic pathology as it pertains to our specialty, each forenoon, and attendance at an outpatient clinic in the afternoon, for the first half of the course, and for the second half have more clinical training added in diagnosis, prognosis, treatment, and minor and major surgery, we may have in our ranks many thoroughly trained otolaryngologists. These are not new suggestions, because they have been offered before. Coates,[4] a year ago, emphasized many of these points.

This will require a minimum of eight years after leaving preparatory or high school, and a maximum of eleven or twelve years for those who are willing and can afford to acquire the best training possible. If the student finishes preparatory or high school at 18 years of age he can, with minimum training, enter on the practice of our specialty at 26. If he can afford to spend more time and money, he can after eleven or twelve years begin practice at 29 years of age. Many students are ready for college at 17 and a few at 16. The fact that more and more of the basic sciences, such as chemistry, botany and zoology, are taught in the high or preparatory school more thoroughly today than formerly leaves more time in college for other premedical subjects.

In order to present this in concrete form, I would suggest that the first year be spent in the study of the basic sciences at some one of our leading universities, one half of each day being devoted to work in the laboratories and the other half day in attendance at the outpatient clinic, all under proper supervision. The second year should be spent in the outpatient clinic and in the hospital for the thorough study of each and every patient, including diagnosis, treatment and minor and major surgery, with every opportunity afforded to follow up the patients. A certificate should be granted at the end of the first year and a degree at the end of the second year. Students who can afford to go abroad for their third year should be encouraged to do so. Briefly expressed, three years of college training, leading to a degree, four years in a class A medical school, one year's general internship and two years' training in otolaryngology should be the minimum standard acceptable to the board.

There is one weak link in most graduate courses, and this is the failure to teach the relation of diseases of the ears, nose and throat to diseases of other organs of the body. I do not mean that this is not being done, because it is attempted, but that it is not being thoroughly and systematically done. At first glance this may seem easy of accomplishment. In reality it is a big undertaking. Relatively speaking, only a few otolaryngologists have had the broad training and experience to qualify them for the task. Ask ten average otolaryngologists the causes of paralysis of the recurrent laryngeal nerve and only one of the ten will be able to answer intelligently. They can all tell the technic of tonsillectomy, but very little about the indications for a tonsillectomy. Shambaugh[5] has emphasized the importance of avoiding fads. Thorough training will almost eliminate the fads.

It may be best for the board to outline what it will or will not accept as a minimum of training from

4. Coates, G. M.: Training in Otolaryngology, J. A. M. A. **89**: 335-337 (July 30) 1927.

5. Shambaugh, G. E.: Fads and Fancies in the Practice of Otolaryngology, Tr. Am. Laryng. A., 1926, pp. 168-177.

otolaryngologists who have practiced our specialty less than five years. With the endorsement, cooperation and support of the five American ear, nose and throat societies, such a requirement would lend great weight in establishing higher standards than we have had in the past. In fact, such action would establish the minimum standard just as the American College of Surgeons has established a minimum hospital standard. The American Board of Otolaryngology is the logical organization to put into practice and effect the very valuable suggestions offered by Shambaugh's committee and others.

While I have only the kindliest feeling for past, present and future members of the board, I recall this suggestion from the president, Dr. H. P. Mosher, that constructive criticisms are always in order. My idea is that in the past the requirements and standards have been too low rather than too high, and that after four years of intensive, constructive work the board can well afford to raise gradually the requirements for passing the examination. Will it not be best for the board to say, for instance, that, beginning with 1932, candidates who have practiced our specialty less than five years will not be accepted for an examination unless they can show that they have at least the minimum training, as previously outlined so well by Dr. George E. Shambaugh [2] and his committee? Such a requirement in addition to a more rigid, though fair, examination, properly enforced, will make the certificate of the board even more valuable in the future than it has been in the past and will define, better than federal laws can do, what training young physicians must have before holding themselves out to the public as adequately trained otolaryngologists.

Physicians' Building.

KETOGENIC DIET TREATMENT OF EPILEPSY IN ADULTS *

CLIFFORD J. BARBORKA, M.D.
ROCHESTER, MINN.

Epilepsy has attracted the attention of physicians from the time of Hippocrates to the present day. Conservative authorities have estimated that in the United States about 500,000 persons are afflicted to some degree. These estimates, and the apparently hopeless and depressive nature of the affliction, have stimulated investigation in an effort to discover the cause of the attacks and any possible methods of improving treatment. So many hypotheses and remedies have been advanced, tried and found wanting that there is naturally a healthy disbelief in any new form of treatment. Time alone will supply facts or substantial reasons for altering what may be termed traditional treatment of epilepsy.

Guelpa and Marie,[1] in 1910, discussed fasting as a dietary measure in the treatment of epilepsy. Gradually, since 1921, various opinions have appeared in the literature, principally based on the suggestions of Jarloev [2] and Bigwood,[3] concerning the possibility that there may be a relationship between the acid-base equilibrium of the body and the convulsive attacks, the attacks being more likely to occur when the reaction of the body is more nearly alkaline. In 1921 Geyelin [4] applied fasting to the treatment of epileptic children. In most instances the children were free from convulsive seizures during the period of fasting which produces ketosis, but the attacks returned sooner or later after the resumption of a normal diet. It was therefore clear that repeated periods of fasting were impracticable in the maintenance of ketosis.

The gradual development of the science of nutrition and especially the studies of the metabolism of diabetes mellitus, stimulated by the works of Lusk,[5] Du Bois,[6] Woodyatt,[7] Shaffer,[8] and others, makes it possible to plan diets that will be ketogenic. In 1921, Wilder,[9] while working with high-fat diets in the treatment of diabetes mellitus, first suggested their use in the treatment of epilepsy as a means of producing ketosis and still furnishing adequate food. This was the beginning of the ketogenic diet, so called because the ketogenic factors in the diet outbalanced the antiketogenic factors.

The use of the ketogenic diet was begun in the Mayo Clinic in 1921 in a few unselected cases of adults, with rather indifferent results. This diet has been prescribed chiefly by pediatricians. Helmholz and Peterman,[10] in 1922, began utilizing it for children, and recently Helmholz [11] has reported the results of five years' experience. He found that, of the children who suffered from idiopathic epilepsy and who were given the ketogenic diet, 31 per cent were free from attacks and 23 per cent were definitely improved. Thus definite benefit was secured by the dietary regimen in 54 per cent of the children. The remaining 46 per cent were not benefited by the treatment, although in many instances there was temporary improvement. As a result of the work of Peterman, Talbot, Metcalf and Moriarty,[12] and others, the fact has been established that children suffering from idiopathic epilepsy are greatly benefited by a diet high in fat and sufficiently low in carbohydrate and protein to produce ketosis. Guelpa noted a change in the mental demeanor of patients who fasted. Pediatricians have called attention to this, and I have noted clinically that the mental conception is clearer. There seemed to be a more intelligent expression, a more normal and agreeable attitude, and many patients were definitely less irritable, even those who were not benefited. Weeks, Renner, Allen and Wishart,[13] in 1923, made extensive observations on the effect of fasting and various types of diets on epileptic patients. These

* From the Division of Medicine, Mayo Clinic.

* Abridgment of thesis submitted to the Faculty of the Graduate School of the University of Minnesota in partial fulfilment of the requirements of the degree of Master of Science in Medicine, 1928.

1. Guelpa, G., and Marie, A.: La lutte contre l'épilepsie par la désintoxication et par la rééducation alimentaire, Rev. de therap. **78:** 8-13, 1911.

2. Jarloev, Einar: Sur l'équilibre acidobasique du sang humain, étudié dans ses rapports avec diverses affections, Compt. rend. Soc. de biol. **84:** 156-158, 1921.

3. Bigwood, E. J.: Perturbation de l'équilibre acide-base du sang dans l'épilepsie, Compt. rend. Soc. de biol. **89:** 839-841, 1923.

4. Geyelin, H. R.: Fasting as a Method for Treating Epilepsy, M. Record **99:** 1037-1038, 1921.

5. Lusk, Graham: The Elements of the Science of Nutrition, ed. 3, Philadelphia, W. B. Saunders Company, 1917.

6. Du Bois, E. F.: Basal Metabolism in Health and Disease, Philadelphia, Lea & Febiger, 1924.

7. Woodyatt, R. T.: The Action of Glycol Aldehyde and Glycerin Aldehyde in Diabetes Mellitus and the Nature of Antiketogenesis, J. A. M. A. **55:** 2109-2112 (Dec. 17) 1910; Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28:** 125-141 (Aug.) 1921.

8. Shaffer, P. A.: Antiketogenesis: IV. The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, J. Biol. Chem. **54:** 399-441 (Oct.) 1922; Antiketogenesis: Its Mechanism and Significance, Medicine **2:** 375-404 (Nov.) 1923.

9. Wilder, R. M.: The Effect of Ketonemia on the Course of Epilepsy, Mayo Clinic Bull. **2:** 307, 1921.

10. Peterman, M. G.: The Ketogenic Diet in the Treatment of Epilepsy, Am. J. Dis. Child. **28:** 28-33 (July) 1924; The Ketogenic Diet in Epilepsy, J. A. M. A. **84:** 1929-1933 (June 27) 1925; Epilepsy in Childhood, ibid. **88:** 1868-1870 (June 11) 1927.

11. Helmholz, H. F.: The Treatment of Epilepsy in Childhood, J. A. M. A. **88:** 2028-2032 (June 25) 1927.

12. Talbot, F. B.; Metcalf, Kenneth; and Moriarty, Margaret: The Ketogenic Diet in the Treatment of Idiopathic Epilepsy, Tr. Am. Pediat. Soc. **38:** 30-34, 1926; Am. J. Dis. Child. **32:** 316-320 (Aug.) 1926; Epilepsy, Chemical Investigations of Rational Treatment by Production of Ketosis, Am. J. Dis. Child. **33:** 218-225 (Feb.) 1927.

13. Weeks, D. F.; Renner, D. S.; Allen, F. M., and Wishart, Mary B.: Observations on Fasting and Diets in the Treatment of Epilepsy, J. Metabol. Research **3:** 317-364 (Feb.) 1923.

authors did not observe improvement in six adult epileptic patients, all imbeciles from the State Village at Skillman, N. J., treated with high-fat diets. Helmholz treated twelve patients suffering from symptomatic epilepsy and observed enough improvement to believe that treatment of this type of epilepsy is worth a trial. The question of whether or not the ketogenic diet will be of benefit to adults with symptomatic epilepsy or idiopathic epilepsy with a high degree of mental deterioration and feeblemindedness should be more thoroughly investigated.

In 1924, selection of adult patients for treatment with the ketogenic diet was begun in the Mayo Clinic. The selection of cases is made on the following criteria: (1) The case must be one of idiopathic epilepsy (that is, the type of epilepsy in which known organic causes of the recurrent convulsions have been eliminated); (2) the patient must have the intelligence and willingness to cooperate to the fullest extent; (3) the patient must be in a suitable environment and have facilities to secure the diet; (4) the attacks of either petit mal or grand mal must be frequent enough to justify some statistical conclusions, over a period of years, regarding the benefit that may or may not be derived, and (5) the patient must be willing to spend two or three weeks under direct supervision so that he may learn individually the manner of maintaining and adjusting the ketogenic diet. The patients are, of course, under the constant supervision of a physician. Education of the patient is as important for success in the treatment of epilepsy as in the treatment of diabetes mellitus.

METHOD OF CALCULATING THE KETOGENIC DIET

Rosenfeld,[14] in 1885, said that fats burn in the fire of carbohydrates. When there is a limitation of carbohydrates, ketone bodies (acetone, diacetic acid and beta-oxybutyric acid) are formed as intermediary products of incomplete fat metabolism and are excreted in the urine. Accompanying the formation of acetone bodies, which act as organic acids, the clinical condition known as acidosis develops, the degree of which is readily determined by the determination of the carbon dioxide combining power of the blood. A mild degree of acidosis or, possibly better, ketosis exists in fasting persons who after the first day or so must rely on their fat and protein stores; since the stores of carbohydrate are small, a short fast depletes them and subsequently only the carbohydrate derived from protein is available; this, however, is sufficient to prevent a high degree or dangerous condition of acidosis.

A diet so constructed that it approximates the quantities of the various substances that are metabolized from the body stores of a fasting person can be utilized clinically for the production of mild ketosis which may be of value in the treatment of epilepsy. Woodyatt first formulated a method of calculating the diet for diabetic patients designed only to avoid the production of ketosis; his formula can equally well be used for calculating diets that will produce ketosis. In the treatment of epilepsy in the Mayo Clinic a method was utilized which, although less exact from the point of view of the theoretical relationship involved, is sufficiently accurate for clinical work and has the advantage of greater simplicity; the resulting diets conform to the theoretical causes of ketosis as developed by Woodyatt and by Shaffer. To construct diets that will produce mild ketosis, that is, the formation of moderate quantities of ketone bodies with excretion in the urine, two main principles must be borne in mind.

In the first principle the total amount of food given must correspond as closely as possible to the total energy requirements of the patient. Besides the difficulty of estimating this requirement there is the added factor of error in the construction of the diets from the calculated prescription. If the diet happens to match exactly the body's consumption of carbohydrate, fat and protein from exogenous and endogenous sources, the calories contained in the diet will be utilized each day in metabolism without either storing up excess or drawing from the patient's own stores. It is possible to determine with exactness the calory requirements in long experimental periods with a patient in a respiration chamber all day. Our clinical methods, however, do not yet permit the accurate estimate of total energy requirements.

TABLE 1.—*Method of Calculation for Ketogenic Diet*

Diet	Carbohydrate, Gm.	Protein, Gm.	Fat, Gm.	Procedure
1	Estimated calories* × 0.035	Weight in pounds × ½	Estimated calories × 0.09	Continue for from six to seven days; test diet to determine whether or not total estimated calories are sufficient for maintenance of body weight
2	Estimated calories × 0.02	Weight in pounds × ½	Estimated calories × 0.09	Continue for from one to two days; use as intermediate diet prior to production of ketosis, or have patient fast for two days and begin with diet 3
3	Estimated calories × 0.015	Weight in pounds × ½	Estimated calories × 0.10	Continue for from three to five days; ketosis may develop at this stage
4	Estimated calories × 0.010	Weight in pounds × ½	Estimated calories × 0.10	
5	Estimated calories × 0.008	Weight in pounds × ½	Estimated calories × 0.10	Continue indefinitely; diets 4, 5 and 6 to be used in order to develop or intensify ketosis if necessary
6	Estimated calories × 0.006	Weight in pounds × ½	Estimated calories × 0.10	

* Total estimated calories = weight in pounds × 16.

In order to determine the total energy requirements, the basal maintenance requirements are first estimated directly or calculated with considerable accuracy from the Du Bois normal standards. To this it is necessary to add from 25 to 50 per cent in order to take into account the specific dynamic action of food and the contemplated muscular activities. Boothby and Sandiford [15] first brought out nomographic charts as a means of calculating the calories for basal maintenance. For practical purposes the energy requirement of the ordinary patient is approximately 16 calories for each pound of body weight. Thus one can usually obtain a fairly close approximation of the total calory value of the food needed by multiplying the patient's weight in pounds by 16 (weight in kilograms by 35).

In the second principle, ketosis, which involves limitation of the carbohydrate quota of the diet, is developed and maintained. For many years articles have appeared in the literature on the problems of intermediary metabolism underlying the development of ketosis. Woodyatt, Shaffer and, later, Wilder have given exact methods for making this calculation in accordance with

14. Rosenfeld, George: Ueber die Enstehung des Acetons, Deutsche med. Wchnschr., 1885, pp. 683-686.

15. Boothby, W. M., and Sandiford, R. B.: Nomographic Charts for the Calculation of the Metabolic Rate by the Gasometer Method, Boston M. & S. J. **175**: 337-354 (Sept. 22) 1921.

certain fundamental principles of the combustion of fat. Their formulas involve the theoretical principles concerned. The same results can, however, be obtained by ignoring in the actual calculation of the diet the theoretical considerations involved and merely making the amount of carbohydrate a certain percentage of the total calories as estimated. On this basis, if the total calories needed are multiplied by factors varying from 0.035 to 0.006 (table 1), the quantity of carbohydrate needed for gradually producing ketosis is obtained in grams. The protein quota (table 1) is calculated as one third of the body weight in pounds (two thirds of the weight in kilograms). The fat quota is obtained by multiplying the total calories by 0.09 or 0.10 (table 1).

Each patient to be given the ketogenic diet should be given, as an initial diet, the total estimated calories obtained by multiplying the body weight by 16. The carbohydrate, protein and fat are then calculated according to diet 1 in table 1. This test diet is continued for from six to seven days to determine whether or not the total estimated calories are sufficient for the maintenance of body weight, allowing a fluctuation during the week of 1 or 2 pounds (0.5 or 0.9 Kg.) gain or loss. If the weight does not remain reasonably constant the calories are raised or lowered depending on a gain or loss in weight. After the determination of the estimated calories sufficient for the maintenance of weight, the next procedure is the production of ketosis. Occasionally the sudden change from the normal relatively low-fat diet, on which the average patient now lives, to the low-carbohydrate and high-fat diet may result in nausea or even vomiting. There will be little difficulty if the change is made gradually by the interposition for several days of intermediate diets (as diet 2, table 1) or sometimes by a short fasting period for one or two days before the institution of the higher fat diets illustrated by diet 3. If nausea should occur, small amounts of orange juice may be prescribed, which gradually overcome the sensation. Diet 3 can be continued for from three to five days, as a result of which ketosis usually begins. Diets 4, 5 and 6 are then given in order to intensify the ketosis, if such is needed to control the attacks. For example, for a person weighing 156 pounds the estimated calories are $156 \times 16 = 2{,}496$, or, roughly, 2,500 calories. The test diet is: carbohydrate $(2{,}500 \times 0.035)87$ Gm.; protein $(156 \times \frac{1}{3})52$ Gm., and fat $(2{,}500 \times 0.09)225$ Gm., and according to table 1 the various diets would be as given in table 2.

TABLE 2.—*Ketogenic Diets Calculated According to Table 1*

Diet	Carbohydrate	Protein	Fat	Calories	Woodyatt FA : D Ratio	Molecular Ratio
1	87	52	225	2,581	1.6 : 1	1.1 : 1
2	50	52	225	2,433	2.2 : 1	1.5 : 1
3	37	52	250	2,606	2.7 : 1	1.8 : 1
4	25	52	250	2,558	3.1 : 1	2.1 : 1
5	20	52	250	2,538	3.3 : 1	2.2 : 1
6	15	52	250	2,518	3.6 : 1	2.4 : 1

In the last two columns is shown the theoretical keto-antiketonegic ratio as calculated by Woodyatt's formula $\frac{\text{Fatty acids}}{\text{Dextrose}} = \frac{F.\ A.}{D.} = \frac{0.44P + 0.9F}{C + 0.58P + 0.1F}$ and also the molecular ratio. The diets thus calculated are on the basis of the total energy requirement in the carrying on of normal activities. If for any reason the total energy demands are lessened, it is necessary to reduce correspondingly the total calories of the diet and to recalculate the quantity of carbohydrate, protein and fat on the new basis.

I wish again to emphasize that the foregoing procedure is only a rough approximation, but the results from its use are sufficiently accurate for practical purposes. Conversely, this simple system of calculation cannot be utilized in exact or experimental work when it is desired to study the relationship of the ketogenic to the antiketogenic molecules. Due consideration must be given to the constituents of the normal adequate diet; that is, protein sufficient to replace the nitrogenous waste and build new tissues, and minerals, vitamins and water.

It is obvious that no matter how simply diets are calculated, the great difficulty still remains of educating the patient so that he knows how to construct diets himself from the calculation. The principle of educating patients suffering from diabetes mellitus has been greatly developed in the last decade by those who specialize in diabetes, and many convenient books on the subject have been published. Among these may be mentioned Joslin's Manual, Wilder's Primer,[16] and Government Bulletin 28[17] showing compositions of food materials. Nearly all physicians are acquainted with these methods, so I merely emphasize that the patient must be carefully and systematically trained, as has been found necessary for the proper management of diabetes. Patients are taught to examine the urine daily to determine whether acetone bodies are being excreted, thus assuring themselves that they are in a state of ketosis. The degree of color intensity of the tests for ketone bodies gives a rough approximation of the intensity of ketosis. They keep a record of the attacks of petit mal and grand mal. If the convulsive seizures persist for a month or two in spite of the ketosis, a period of absolute starvation of from seven to ten days can be tried. During the fast, only the juice of two oranges is given daily, and the patient is urged to drink water (from 1 to 2 quarts). Following starvation, the ketogenic diet is gradually resumed. At the end of six months it is generally possible to determine whether or not benefit has accrued. However, in a few cases that have been controlled, benefit did not result until strict ketosis had been maintained for from eight months to a year. It is not yet known whether or not the patient must always maintain a strict ketogenic diet. There is some evidence that a milder degree of ketosis may be sufficient. The return of the diet to a more nearly normal proportion of carbohydrate and fat will depend on the individual case. If the attacks recur when the intensity of the ketosis is reduced, it of course would mean that a diet should be maintained that produces a degree of ketosis adequate to control the attacks.

REPORT OF CASES

During the last six years the ketogenic diet has been used in the treatment of adults suffering from idiopathic epilepsy. Forty-nine patients have started the treatment, seventeen of whom were unselected and remained on the diet only for from two to four weeks and did not cooperate. The thirty-two selected patients (since 1924) have cooperated to a greater or less degree and have been on the diet for from three months to three years.

An attempt has been made to classify these cases and, for purposes of discussion, they have been tabulated in

16. Wilder, R. M.: A Primer for Diabetic Patients, ed. 3, Philadelphia, W. B. Saunders Company, 1927.

17. Atwater, W. A., and Bryant, A. P.: The Chemical Composition of American Food Materials, U. S. Dept. Agric. Bulletin 28, Washington, Government Printing Office, 1906.

four groups: (1) cases in which attacks have been controlled by the ketogenic diet; (2) cases in which there has been definite improvement, (3) cases that were failures, and (4) cases in which benefit was derived but drugs were also used.

The ages varied from 17 to 42 years, and the attacks varied in duration from one year to thirty-two years prior to the time of treatment.

Seven patients (table 3) have controlled their attacks by the ketogenic diet. Four of the patients were not controlled from the time ketosis developed. The attacks of one were controlled after the third week of the diet. Another patient had three attacks, although they were not severe during the first three months, and since the third month attacks have been controlled. In one case the attacks were less frequent during the first eight months on the diet, after which they were controlled. In the first case in table 1, benefit was not derived during the first eight months. At the end of the sixth month, when benefit was not reported, the patient was advised to discontinue the diet. She replied that if we had no objections she would continue it for another six months. At the end of the eighth month of treatment, the attacks ceased and have not recurred. Helmholz observed a similar case in which the patient did not derive benefit for a year; then the attacks ceased and have not recurred for three years. Three patients did not have attacks following the development of ketosis. These patients have been controlled for from eight months to three years. One patient is now on a normal diet; two patients are on practically normal diets but are restricting gross sweets. The others are following the ketogenic diet and maintaining ketosis.

Seven patients (table 4) were definitely benefited by the diet. The attacks of two patients were greatly reduced and the convulsions were much less severe. Two patients did not have attacks of grand mal after beginning the diet; the attacks of petit mal have not been controlled although there has been some improvement. It is important to note that five of the seven patients were not always in a state of ketosis. One patient had definite attacks when not on the accurate diet and when there were no acetone bodies in the urine.

Thirteen patients (table 5) were not relieved. Four patients maintained the diet accurately and were in a state of ketosis for from three to thirteen months, without any change in the attacks. If the nine patients had been maintained in constant ketosis the results might have been different, as they admitted that ketosis was periodically or questionably present. It seems fair to believe that some of the failures were due to improper management of the diet and to the lack of ketosis, but probably it is more fair to assume that the results are failures unless proved otherwise.

Five patients (table 6) who used phenobarbital both prior to and during the ketogenic diet showed improvement only after the institution of the ketogenic diet.

TABLE 3.—*Observations in Patients Controlled*

Case	Age	Sex*	Diagnosis	Attacks Before Treatment	Duration of Attacks, Years	On Diet, Months	Comment
10	40	♂	Grand mal Petit mal	One to two for three to four days each month Three to seven for three days each month	32	30	Little improvement for first eight months; no attacks since Aug. 15, 1926
46	19	♀	Grand mal Petit mal	Grand or petit mal often every day; might be from one to two weeks	6	19	Attacks controlled since third week of diet
43	30	♀	Petit mal	Gradually until the year previous to diet two to three attacks in twenty-four hours	2	20	Three attacks in first three months on diet, not as severe as before; none since
39	37	♀	Grand mal	Every two to four weeks	5	17	Attacks lessened to one every seven to nine weeks for the first eight months; no attacks for the last nine months
5	42	♂	Grand mal Petit mal	One or two yearly Rather frequent	10	24	No attacks since on diet
47	19	♀	Grand mal Petit mal	Began in 1924; one attack monthly Many times for eight years	8	8	No attacks since on diet
6	32	♀	Petit mal	Once a month; about eight spells a day	7	12	No attacks since on diet

In the tables, ♂ indicates male; ♀, female.

TABLE 4.—*Observations in Patients Improved*

Case	Age	Sex	Diagnosis	Attacks Before Treatment	Duration of Attacks, Years	On Diet, Months	Ketosis	Comment
34	17	♀	Grand mal Petit mal	Only two attacks, 1923 and 1925 Daily attacks	6	24	Not always present	No attacks of grand mal; petit mal has almost disappeared
41	30	♂	Grand mal Petit mal	Once a month Daily, sometimes six to seven	2	7	Always present	No attacks of grand mal; petit mal every month or five weeks
40	20	♀	Grand mal Petit mal	Grand mal and petit mal, twice a week	8	6	Not always present	Three attacks since on diet; they occurred when the patient was off accurate diet and there were no acetone bodies in urine
38	34	♀	Petit mal	Several times daily	21	13	Nearly always present	Gradual improvement after three months on diet; last two months decided lessening of attacks
36	21	♀	Grand mal	One attack each month	1	16	Nearly always present	One attack shortly after diet was started; last attack in June, 1927, during an acute pyelitis
19	36	♀	Grand mal	One attack each month	9	17	Present when on strict diet	Two attacks since on diet; patient not always in ketosis
38	22	♀	Grand mal Petit mal	Grand mal or petit mal several times a week	18	8	Always present	Not controlled but attacks reduced to about one a week

COMMENT

It is impossible at this time to prophesy or to explain what these results may or may not mean. Accumulating evidence is sufficient to indicate that the ketogenic dietary regimen is of value in the treatment of some cases of epilepsy, especially in the selected cases of idiopathic epilepsy, both in children and in adults. Children seem to respond better than adults; this may

be due to the shorter duration of the epileptiform seizures. On the other hand, children are more difficult to manage from the standpoint of maintaining a state of ketosis, as they will contrive to obtain candy, bread or other carbohydrates.

Concomitant with the establishment of ketosis or shortly thereafter, there is, in a certain percentage of cases, a decrease in the number of the epileptic seizures or even complete cessation. Of course the benefit may be a coincidence, such as can be produced in epileptic persons by a variety of psychic and other influences, and may not be a genuine therapeutic benefit. It is also possible that the mere restriction of gross sweets and the calory curtailment of a ketogenic diet are the factors rather than the ketosis, although there seems to be a barbital. There is considerable evidence that the convulsions of epilepsy are associated with metabolic disturbance. Ketosis may be only one altered action of the intermediary metabolism which may be a factor in controlling the attacks. It may have a more fundamental influence on the balance of the basic elements of the nerve tissues and thus alter the conductivity of the nerve cell.

It is unfair to the patient, at the time he approaches the treatment, to offer him this regimen as a cure. No one can foretell, in any individual case, whether or not benefit will result. While as yet many difficulties are encountered in the use of the ketogenic diet, patients who have tried all other forms of treatment without benefit are usually willing to assume any burden and go

TABLE 5.—*Observations in Failures*

Case	Age	Sex	Diagnosis	Attacks Before Treatment	Duration of Attacks, Years	On Diet, Months	Ketosis	Comment
48	27	♀	Grand mal Petit mal	Once or twice a month..... Weekly	6	3	Periodic	Diet three months; no change noted; now uses phenobarbital also and has had two major attacks since July, 1927
12	20	♂	Grand mal	Every two or three weeks.....	17	7	Most of the time	No improvement in control of attacks but definite change in mental demeanor
32	21	♂	Petit mal	Attacks vary from daily series to one or two in six months	7	7	Periodic	Failed to be of any benefit
8	19	♀	Petit mal	From one to five a week.....	16	3	Yes	Attacks more frequent; no benefit
17	32	♂	Grand mal Petit mal	One a month..... Every three to four days	22	22	?	No change
29	27	♀	Grand mal Petit mal	Every two to four months..... Once or twice daily	13	6	Periodic	About the same
37	34	♀	Petit mal	One to four daily.....	6	4	Periodic	No benefit
31	19	♀	Petit mal	Vary from three daily to three to eight a month	5	13	Yes	No apparent benefit
42	22	♀	Grand mal Petit mal	Grand mal or petit mal..... Once a month	3	8	Periodic	No grand mal attacks but still has petit mal; used phenobarbital occasionally
44	57	♀	Petit mal	Once a week.....	24	6	Yes	No change in number of attacks
28	45	♂	Grand mal Petit mal	Once a month..... Once a week	15	3	?	Attacks about as regular though less severe
27	30	♂	Grand mal Petit mal	One to three a month..... As often two a day	29	6	?	No apparent change
23	19	♂	Grand mal Petit mal	Grand and petit mal vary; three or four attacks a week	13	6	Seldom present	About the same; had very severe attack at end of six months and stopped diet

TABLE 6.—*Observations in Patients Improved, but also Using Drugs*

Case	Age	Sex	Diagnosis	Attacks Before Treatment	Duration of Attacks, Years	On Diet, Months	Ketosis	Comment
35	20	♀	Grand mal	Three to four attacks a year....	5	30	Periodic	Takes phenobarbital occasionally; has had only two attacks one and a half years apart
49	31	♂	Grand mal	Every twenty-five to forty days regularly	4	6	Periodic	Patient took phenobarbital before starting diet; insists on taking one tablet daily; since diet has had no attacks
33	18	♀	Grand mal Petit mal	Every night ..... Three to seven daily	5	24	Periodic	Always took phenobarbital and has continued so with diet; since diet has one or two attacks a week; often free for a month
15	22	♂	Grand mal Petit mal	One monthly ..... Series of three to seven every two to four weeks	2.5	24	Periodic	Always took phenobarbital and has continued so with diet; had five attacks since 1925; no attacks since June, 1927
45	23	♀	Grand mal Petit mal	Average one a month..... One a week	11	6	Periodic	Has always used phenobarbital; gradual decrease in frequency; last attack four months ago

direct relationship between the degree of improvement in certain cases of epilepsy and the intensity of ketosis produced. McQuarrie and Keith [18] have demonstrated that this differs greatly in different persons and probably varies in the same person from time to time. There is also evidence of the possible relationship of the duration of ketosis and its influence on the attacks, as certain patients have not responded until they had been in ketosis for many months.

Wilder originally proposed the diet on the theory that acetoacetic acid should behave pharmacologically as an anesthetic. If this is the case, the ketogenic diet may act only as a palliative, similar to the action of phenobarbital.

18. McQuarrie, Irvine; and Keith, H. M.: Epilepsy in Children: Ketonuria, Ketogenic Diets, Am. J. Dis. Child. **34**: 1013 (Dec.) 1927.

to any amount of trouble and sacrifice to carry out a plan which offers a ray of hope for recovery or diminution in the frequency and severity of the attacks. There are certain difficulties in the treatment which I believe are worthy of note:

1. The calculation of the diet so as to maintain ketosis in persons in varied occupations who have different energy requirements for work and exercise.

2. Infringement of the rules of diet as a result of failure to convince the patient of the importance of small deviations or lack of cooperation.

3. The sensation of hunger resulting from the lack of bulk; this can be obviated by the use of bran wafers, agar jelly and gelatin as fillers.

4. The difficulty of incorporating large amounts of fat in the diet, since the chief supply must come from

cream, butter, bacon, olive oil (plain or in mayonnaise) and cod liver oil.

5. The presence of constipation. Since constipation is commonly associated with epilepsy and seems to predispose to an attack, it is desirable to insure good elimination. The ketogenic diet is in itself somewhat laxative so that cathartics should not be necessary, but if they are, the selection should be limited to plain granular agar, various mineral oils, salts (Carlsbad or magnesium sulphate), and the bitter fluidextract of cascara. Any of these should be used to aid in establishing regularity of defecation and should be withdrawn as soon as possible.

6. The nausea or even vomiting occasionally resulting at the beginning of the ketogenic diet, from the sudden change from the normal or high carbohydrate diet, on which the average patient lives today, to the low carbohydrate and high fat diet. This, as pointed out, may be avoided by the gradual change in the proportions of carbohydrate and fat.

The problem of meeting these difficulties is purely a matter of the education and instruction of the patient, which is the most important part of the treatment. While the diet is being adjusted the patient is learning how to test for the acetone bodies in the urine, how to use a set of scales, how to use food tables, and how to translate the diet prescription, which calls for grams of carbohydrate, protein and fat, into meals in terms of vegetables, fruits, eggs and other foodstuffs. This at first seems difficult, but experience teaches us that patients who have enjoyed only limited educational advantages can be trained to take care of themselves.

TABLE 7.—*Summary of Cases*

	Cases
Adults controlled by ketogenic diet	7
Adults improved by ketogenic diet	7
Adults improved by ketogenic diet, but also using drugs	5
Adults definitely deriving benefit by diet	19
Adults in whom the diet failed	13
Adults (unselected) on diet for only two to four weeks	17
Total adults on ketogenic diet	49

SUMMARY

Thirty-two adult patients suffering from idiopathic epilepsy were treated with a ketogenic diet. In seven cases the attacks were controlled, and in twelve the patients were definitely improved; thus nineteen were benefited by the diet. Thirteen patients were not definitely benefited, although many of them were not maintained in a state of ketosis. The results are summarized in table 7.

Growth of Cults Lack of Common Sense.—It is not amiss to note that, during the period of greatest development of medical science, development not only in its content but also in its intent, there has been at the same time in this country the greatest development of favorable inclination toward weird hypotheses concerning the character of disease and methods of its treatment that the world has ever seen. That this is not due merely to the dissemination of new knowledge, to those strata of society which previously had never thought and which are now incapable of logical thought, is amply demonstrated by the growth of cults with a clientele made up in large measure of those members of society who have been by tradition and training accustomed to thinking. The aberration of their mental processes is not due to moronic heredity but perhaps in large measure to lack of contacts with enough individuals with sound common sense.—Wilson, L. B.: *Minnesota Med.* **11**:365 (June) 1928.

THE SERUM TREATMENT OF ERYSIPELAS *

WILLIAM S. McCANN, M.D.
ROCHESTER, N. Y.

In May, 1926, Birkhaug [1] reported the results of the treatment of sixty cases of erysipelas with a specific serum. Of these, twelve especially striking cases were reported in detail. The serum was produced by the adaptation of the method which Dochez [2] had employed in the production of an immune serum against the streptococcus of scarlet fever. The serum was first employed in the unconcentrated form, of which an average dose of 100 cc. was used, and later in a concentrated form, with an average dose of 15 cc. The report does not state that all recovered, though no specific statement is made that any died, only that "two patients were moribund when first visited." It is impossible to analyze his series of cases from the standpoint of age distribution, seasonal occurrence, total duration of fever and other factors which might enter into an evaluation of the results, nor has a comparison been made with a control series. As a result of this and of previous studies, Birkhaug concluded that the etiologic agent of erysipelas was a specific strain of hemolytic streptococcus and that the serum produced with the specific type of micro-organism possesses "very marked curative properties when administered early in the disease," that is, within the first three days. He observed an amelioration of "the general toxic depression," presumably that due to the presence in the blood of a toxic substance "similar in nature to the toxic filtrate produced by *Streptococcus erysipelatus*," which he had demonstrated in the blood and urine of patients in the acute stages of the disease.[3] He was careful to state that one should determine the adequacy of dosage by the intradermal injection of a skin test dose (0.1 cc. of a 1:1,000 dilution of erysipelas toxic filtrate) made simultaneously with the intramuscular injection of serum. Adequate neutralization of the toxins of the disease would be indicated by a negative reaction to intradermal toxin.

When the medical clinic began to receive patients with erysipelas, the serum was used, beginning in July, 1926, with the opening of the Municipal Hospital. The early results were most discouraging, so that it was decided to run a control series of alternate cases untreated with serum. This was continued to May 8, 1927, after which date alternate cases were treated with scarlet fever serum obtained from the New York State Department of Health. Some of the early cases were treated with unconcentrated erysipelas serum obtained from Dr. Birkhaug, while later concentrated serum was furnished by the firm of Squibb according to the terms of a contract with Dr. Birkhaug.

In order to compare results over a longer period of time, we have included in the statistical analysis following all the cases of erysipelas treated in the old Municipal Hospital from January, 1925, to the opening of the new hospital in July, 1926. In addition we are

* From the Department of Medicine, University of Rochester School of Medicine and Dentistry.
* Read before the Section on Practice of Medicine at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 15, 1928.

1. Birkhaug, K. E.: Erysipelas V. Observations on the Etiology and Treatment with Erysipelas Antistreptococcic Serum, J. A. M. A. **86**: 1411 (May 8) 1926.
2. Dochez, A. R.: Significance of Streptococcus Hemolyticus in Scarlet Fever, J. A. M. A. **82**: 542 (Feb. 16) 1924.
3. Birkhaug, K. E.: Proc. Soc. Exper. Biol. & Med. **23**: 201, 1925.

indebted to Dr. S. W. Clausen, chief of the pediatric service, for permission to include fifteen cases of children treated in his service.

The monthly incidence of admissions for erysipelas was greatest in January, February, March and April. Deaths of adults occurred only in December, January, February and April. The period covered by this report extends from January, 1925, to May 1, 1928. The statistics cover 115 attacks, of which there were ninety-three adults with ninety-six attacks and nineteen children with nineteen attacks. Without reference to treatment there were twenty deaths, ten in adults, and ten in children. Autopsies were performed on eight adults and eight children.

The distribution of erysipelas lesions is given in table 1.

Analysis of fifty-one attacks in adults during the period from Jan. 1, 1925, to May 8, 1927, shows that thirty received erysipelas serum, with six deaths, a mortality of 20 per cent; twenty-one did not receive serum, with four deaths, a mortality of 19 per cent.

TABLE 1.—*General Statistical Data*

Distribution of erysipelas lesions:		
Adults	Cases	Deaths
Body only	3	0
Head only, face, ears and scalp	81	6
Head, spreading to neck and trunk	12	4
Children		
Body only	6	4
Head only	9	2
Head extending to body	4	4
Cases in which erysipelas serum was used:		
54 adults with 6 deaths (11.1 per cent)		
15 children with 8 deaths (53.4 per cent)		
69	14	(20.2 per cent)
Cases in which scarlet fever serum was used:		
21 adults with 0 deaths		
2 children with 2 deaths		
23	2	8.7 per cent
Cases in which no serum was used:		
23 adults with 4 deaths, 17 per cent		
2 children with 0 deaths, 0 per cent		
25	4	16 per cent
Of 19 children, 10 died = 52.6 per cent mortality		
Under 1 year, 13 with 9 deaths = 69 per cent		
1-2 years, 3 with 1 death = 33.3 per cent		
Over 2 years, 3 with 0 deaths = 0 per cent		
Ages of adults who died:		
6 receiving erysipelas serum ranged from 15-73. Average, 52 years		
4 receiving no serum, ranged from 30-78. Average, 60 years		

The twenty-four living patients who received erysipelas serum were treated on an average of 3.9 days after onset. The six dead patients who received erysipelas serum were treated on an average of 3.5 days after onset. The patients who lived received an average dose of 50 cc. of concentrated serum, or an average of 136 cc. of unconcentrated serum when this was used. The patients who died received an average of 70 cc. of concentrated serum, and in one case 225 cc. of unconcentrated serum. From this it is obvious that the deaths were not due to the later starting of treatment or to the use of smaller doses than in the cases of those who survived.

There were no deaths among the adults treated alternately, as they were admitted, with erysipelas and scarlet fever serum in the period from May 8, 1927, to May 1, 1928.

In twenty-one cases scarlet fever serum of an average dose of 17,000 units of antitoxin was given 4.3 days after onset, and in twenty-four cases an average dose of 35 cc. of concentrated erysipelas serum was given 3.5 days after onset. Those who survived prior to May 8, 1927, received 50 cc., and those who died in the same period 70 cc. of concentrated erysipelas serum. The patients treated during the period in which all the deaths occurred were given much larger doses of serum than in the period in which all survived. One might infer that this indicated a greater potency of the serum, though it could be equally well explained by a lessened severity of the disease in the period from May, 1927, to May, 1928.

TABLE 2.—*Effect of Erysipelas Serum on the Disease*

Duration of Fever
No serum, 25 cases
21 living averaged 6.9 days of fever
4 dead averaged 6.8 days of fever
Erysipelas Serum, 69 cases
55 living averaged 8.6 days of fever
14 dead averaged 8.4 days of fever
Scarlet Fever Serum, 23 Cases
21 living averaged 9.1 days of fever
2 dead averaged 2.5 days of fever

In the children's series there were nineteen cases. Fifteen children were treated with erysipelas serum, seven living and eight dying. Those who lived were treated on the average of 2.9 days after the onset, while those who died were treated on the average of 3.8 days after onset. Those who lived received an average total dose of 26 cc. of concentrated erysipelas serum, and those who died received an average total dose of 38 cc. of concentrated erysipelas serum. It would appear that the deaths were not due to the use of smaller doses of serum than were used when the patients survived. However, the later onset of treatment might have significance as a cause of greater mortality.

In considering the total duration of fever, it was felt that one could deal best with a perfectly objective record left by nurses on the temperature chart, supplemented by the history obtained from the patient as to the duration of the disease prior to admission to the hospital. This information was complicated by the fact that some patients with facial erysipelas had been suffering from sinusitis, otitis media and mastoiditis prior to the appearance of erysipelas on the face. In nearly all cases it was possible to date the onset of the erysipelas accurately as a cause of fever apart from the preceding infection. It should also be stated that a secondary fever occurring from serum sickness, or from a complication, was not counted in the duration of fever due to erysipelas provided the skin lesions were not advancing and showed signs of regression. The fever of serum sickness was usually quite easy to exclude.

TABLE 3.—*Total Number of Days in Hospital*

Group	Cases	Average Total Days in Hospital	Percentage of Serum Sickness
No serum	23	10.0	0
Erysipelas serum (prior to May 8, 1927)	30	15.2	32
Erysipelas serum (after May 8, 1928)	24	19.7	20.8
Scarlet fever serum	21	16.6	9.5

The several groups of cases may also be compared on the basis of the total number of days in the hospital (table 3). Only the adults are included in this analysis.

The occurrence of serum sickness had little effect on the total stay in the hospital; it was quite mild as a rule. A few patients had severe serum sickness with fever and joint pains as well as urticaria. Patients subjected to the disturbances incident to the parenteral assimilation of considerable amounts of foreign protein seem to undergo convalescence more slowly than those not so handicapped, even though serum sickness is not observed.

In order to determine whether intradermal injection of erysipelas and scarlet fever toxins simultaneously with serum give an indication of adequacy of serum dosage, the following tests were carried out in eleven patients receiving erysipelas serum and seven receiving scarlet fever serum. The amounts of diluted toxin injected were 0.1 cc. Dilutions were so arranged that tests were made of 1, 10 and 25 skin test doses of erysipelas toxin, and of the usual amount of scarlet fever toxin employed in the so-called Dick test. The reactions were read at twenty-four and forty-eight hours. The results were quite surprising. Seven patients receiving erysipelas serum with negative reactions to all the toxin tests continued to have fever and active erysipelas lesions for from two to eight days with an average of five and three-tenths days after serum treatment. On the other hand five patients showing positive reactions to toxins had a continuation of fever from one to three days with an average of only two and four-tenths days after treatment. Similarly, seven of the patients receiving scarlet fever serum were tested. In five cases the skin reactions were negative, yet fever persisted for up to six days, with an average of three and six-tenths days after treatment. In two cases showing markedly positive skin toxin reactions, an arrest of the disease was effected in one day and in six days, respectively. It would appear that skin toxin tests do not afford reliable indications of the need of further treatment.

The results of these skin toxin tests showed that the two serums were capable of cross neutralization of the respective toxins.

COMMENT

The results of an analysis of the data in these cases indicate that a proper evaluation of the efficacy of the erysipelas serum requires a consideration of many factors. The mortality is greater in some seasons than in others. The age of the patient is of great importance, especially in a group of children. The variations in severity of erysipelas from year to year are quite marked, as is the case with other acute infectious diseases. The control series should be observed simultaneously with the treated series of cases. The distribution of the erysipelas lesions on the body affects the severity of the disease profoundly. Two series of cases of body erysipelas might have very different mortality rates provided more young children were included in one than the other. There may be geographic differences in the severity of erysipelas just as there are in the case of scarlet fever. Thus Musser [4] reports only two deaths in a series of thirty cases treated with erysipelas serum, but no data are presented showing the usual mortality for erysipelas in New Orleans.

If one examines critically the results reported by Symmers and Lewis,[5] much of their apparently favorable significance disappears. These writers report a considerable number of cases, to be sure, 131 patients treated, and 107 patients untreated with serum. The control and treated cases were observed in different years for a period of only forty-nine days in each year. These forty-nine days occurred in May and June, months of relatively low mortality of erysipelas. If one compares first the mortality in facial erysipelas only, in the report of Symmers and Lewis, the difference in mortality is slight, 4.5 per cent for those treated with serum against 6.5 per cent for those untreated. In view of the fact that they occurred in different years, this difference has slight significance. Taking next the average number of days in the hospital, these authors show a difference between 5.6 days for those treated with serum and 13.1 days for those not treated. The total number of days in the hospital may depend on the energy with which patients are discharged by the house officers, and as a basis for comparison it is far less reliable than the figures on the days of fever, objective data recorded by the nurses on the charts.

The difference in mortality is striking in the two series with body erysipelas observed by these authors. The age distribution of these two groups is not given. It should be pointed out that the incidence of a few more or a few less children would have a profound effect on the statistics.

Of the six fatal adult cases in which erysipelas serum was given, only two were treated within the first three days of the disease. In this respect the requirements of Birkhaug have not been fulfilled. On the other hand, much larger doses were used than he originally recommended as adequate.

Supplementing the analysis just given of cases of erysipelas occurring in the years from January, 1925, to May, 1928, we have obtained from the records of the Rochester Municipal Hospital an additional series of 221 cases admitted in the eleven years 1913-1924, inclusive. Of the 221 patients only ten died, a mortality of 4.5 per cent for erysipelas not treated by serum. The highest mortality rate occurred in 1914, twenty-three cases with three deaths, or 13.4 per cent; in 1917 and 1921 it was 9 per cent; in 1924, 10 per cent. In the years 1913, 1915, 1916, 1919 and 1922 there were no deaths from erysipelas in the Municipal Hospital among the eighty-eight cases received in those years.

The 221 patients had an aggregate duration of 2,872 hospital days, with an average stay of thirteen days. The range of variation was from 10.1 days in 1924 to 15.0 days in 1920. The average stay of patients not treated with serum was less than of the serum treated patients of the later series.

CONCLUSIONS

1. The true value of the serum treatment of erysipelas will not be established until an analysis can be made of a long series of cases with simultaneous controls untreated by the serum, so that seasonal and annual variations will be controlled. The treated and control series should be balanced according to the ages of patients and the distribution of erysipelas.

2. The previously published reports of results of serum treatment are open to serious objections on the score of inadequate control.

3. The cases just reported do not prove that erysipelas serum is of no value. Comparison of these with statistics for the cases admitted in the eleven years previous to the introduction of serum treatment are

4. Musser, J. H.: Treatment of Acute Infectious and Contagious Diseases, with Especial Reference to Scarlet Fever, Erysipelas, Measles and Meningitis, J. A. M. A. **88**: 1125 (April 7) 1927.

5. Symmers, Douglas; and Lewis, K. M.: The Antitoxin Treatment of Erysipelas, J. A. M. A. **89**: 880 (Sept. 10) 1927.

most unfavorable to the use of serum, both as regards mortality and duration of stay in hospital.

4. If erysipelas serum is of value, the evidence of this series indicates that a scarlet fever antitoxin prepared by the New York State Health Department is likewise of value in the treatment of erysipelas.

THE MANAGEMENT OF TARSAL AND METATARSAL FRACTURES

JOHN D. ELLIS, M.D.
AND
JOHN S. COULTER, M.D.
CHICAGO

It has been customary to lavish praise on the structure of the human hand as representing the highest development of specialized function of the extremities and typifying a specialization characteristic of man as distinguished from other primates. The foot is apt to be regarded as an organ which once in the phylogeny of man was more specialized than the present member, which is inferred to be degenerating and, within the narrow limits of civilized foot-gear, becoming distorted and progressively less useful.

In the light of the more recent contributions to comparative anatomy—for example, the studies on arboreal man by Keith [1] and by Jones [2]—it seems clear that in mechanical construction and function there is no essential distinction between the hand of man and that of many of the anthropoids, whereas the adaptation of the foot of man to terrestrial progression has developed a specifically human organ. Although the ape's foot has a definitive structure with a specialization of function distinctive from the hand, the digital formula (of relative toe lengths) and the mechanism for partial apposability of the hallux have not been changed completely. In man, furthermore, the hallux has definitely become the dominant digit and the scaphoid-cuneiform portion of the long arch the chief weight-bearing portion, while the fifth toe is fast becoming vestigial. In the anthropoid's foot, none of these changes are occurring.

It is a generally accepted doctrine of reconstructive surgery that the more specialized an injured part, the more difficult is its rehabilitation and the more likely is its specialized function to be impaired by trauma. Attention is therefore directed to the extreme specialization of the human foot. Surgeons have somewhat laggingly followed the comparative anatomists and are too prone to regard the foot as a poor relation of the hand, less mobile and therefore less specialized, not deserving, when injured, of the expenditure of time and energy which is accorded to the restoration of function of the injured hand. Certainly, less space is devoted in the surgical literature to the minutiae of the indications and the methods for its treatment after injury.

In man the muscle balance is ranged around the second digit, the interosseus muscles converging symmetrically from either side upon it, the toes being moved laterally to and from this digit. The midline of the human foot has changed from the third to the second toe. Duckworth [3] says that while in most specimens of the gorilla the midline falls through the third toe, "it must be admitted that many possess the human arrangement, these muscles being grouped about an axis formed by the second digit."

The human baby first walks on the outer side of the foot and the bones of this side are first to ossify. Human specialization seems to be producing a tendency to place more and more weight on the inner margin of the foot as a supporting apparatus. In other words, the typical human change and tendency in evolution seems to be a trend toward pronation of the foot. Man has inherited an arboreal concave and supinated foot and is now tending to flatten and pronate this as an adaptation of the foot to terrestrial progression. Paradoxical as it may seem, it is this evolutionary tendency that must be guarded against in the management of foot injuries.

Among the anatomic considerations bearing on the management of foot injuries, the importance of preserving the skeletal, muscular and ligamentous constituents of the various arches has received exhaustive attention by many writers. The same is true of considerations with regard to preserving the proper angles between and the relation of the body and the neck of the os calcis, which are well covered in the modern literature, particularly by Cotton,[4] Magnuson,[5] Straus [6] and Speed.[7] We can add little to these phases of the surgical anatomy of the foot.

PATHOLOGIC PHYSIOLOGY

There are several important therapeutic implications to be drawn from the pathologic physiology of injury to the bones of the foot. In general, there are two types of reaction of these bones to trauma. For clinical purposes these may be classified as atrophic and hypertrophic.

The atrophic class of reaction began to attract attention in 1908 following the description of Köhler [8] of Wiesbaden of a peculiar tarsal scaphoiditis in children in which the scaphoid, as shown in the roentgenogram, was diminished in size (principally in the long axis [9]), became irregular in outline and presented an increased density. In Köhler's first three cases, no definite history of trauma was given and he considered their occurrence as spontaneous. Moffat [10] and McClure [11] studied cases in which the bone did not show any change until several weeks had elapsed after the trauma. The latter had one case in which evidence of bone changes began six weeks after fracture. In 1911, Preiser [12] became interested in Köhler's disease of the tarsal scaphoid and thought it comparable to Kienböck's [13] traumatic disease of the semilunar and both these diseases to result from compression as determined by increased density of the bone in the roentgenogram. This compression, he thought, injured the blood vessels and led to subsequent nutritional disorder in the bone.

1. Keith, A.: Man's Posture, Its Evolution and Disorders, Evolution of Human Foot, Brit. M. J. **1**: 669-672 (April 21) 1923.
2. Jones, F. W.: Arboreal Man, London, Edward Arnold, 1918, p. 38.
3. Duckworth, W. L. H.: Morphology and Anthropology, new edition, Cambridge, **1**: 38, 1915.
4. Cotton, F. J.: Dislocations and Joint Fractures, Philadelphia, W. B. Saunders Company, 1924, p. 695.
5. Magnuson, P. B.: Operation for Relief of Disability in Old Fractures of Os Calcis, J. A. M. A. **80**: 1511-1513 (May 26) 1923.
6. Straus, D. C.: New Method of Treating Recent Fracture of the Os Calcis, J. A. M. A. **77**: 176-177 (July 16) 1921.
7. Speed, Kellogg: Fractures and Dislocations, Philadelphia, Lea & Febiger, 1916, p. 815.
8. Köhler, Alban: Ueber eine häufige, bisheranscheinen unbekannte Erkrankung einzelner kindlicher Knochen, München med. Wchnschr. **55**: 1923-1925 (Sept.) 1908.
9. Lewis, Dean: Practice of Surgery, Hagerstown, Md., W. F. Prior Company, Inc. **2**: 130.
10. Moffat, B. W.: Isolated Disease of the Scaphoid, J. A. M. A. **80**: 87-90 (Jan. 13) 1923.
11. McClure, C. R.: Isolated Disease of the Scaphoid, J. A. M. A. **71**: 1360 (Oct. 26) 1918.
12. Preiser, Georg: Zur Frage der typischen traumatischen Ernährungsstörungen der kurzen Hand- und Fusswurzelknochen, Fortschr. a. d. Geb. d. Röntgenstrahlen **17**: 360-362 (Nov.) 1911.
13. Kienböck, Robert: Ueber traumatische Malazie des Mondbeins und ihre Folgezustände: Entartunsformen und Kompressions frakturen, Fortschr. a. d. Geb. d. Röntgenstrahlen **16**: 77-103 (Dec.) 1910.

Mouchet and Rœderer [14] still believe that there must be some "dystrophy" of undetermined nature present in the bone before the trauma becomes effective.

Central cavity formation sometimes occurs in the injured scaphoid, as reported by Hirsch,[15] Pförringer [16] and Wollenberg.[17] Müller [18] saw this in the semilunar, and Dwight [19] reported a peripheral cavity as "Dwight's fleck."

In regard to the increased density, Hahn [20] and Speed [21] agree in general that this is relatively and largely due to the loss of calcium salts in the surrounding bones as a result of the atrophy of disuse but think that there is also some increased density from compression, as often seen in Kümmell's disease of the vertebral bodies.

Whatever the value of theoretical discussion as to other etiologic factors, there is now no doubt that rarefaction and collapse of the tarsals may be caused by slight trauma with subsequent pressure on the bone due to weight bearing and the pull of the muscles, and the definite indications for treatment can be deduced:

Slight fractures may have late serious results and should be checked from time to time by roentgenologic examination for the beginnings of necrosis and collapse.

Further injury to a slightly compressed bone or injured ligaments and blood vessels may be avoided by applying extension to the parts distal to the injury.

Freiberg's [22] infraction of the metatarsal head, generally the second, also called Köhler's metatarsophalangeal syndrome, deserves the same treatment.

The hypertrophic class of reactions in bones, periosteum, cartilages, ligaments and joint capsules are much more frequent and distressing to the surgeon than the atrophic class. Injury may initiate locally all the pathologic anatomic changes considered characteristic of arthritis deformans. Whether, as believed by Rost [23] and Axhausen,[24] this is the result of injury to joint cartilages, hyperplasia of "subcartilage marrow," rim osteophytes and calcium deposition and fibrosis in the surrounding structures are all too frequently seen in certain individuals. Evidently, such persons often present some "osteogenic dyscrasia" which results in general hyperplasia of structures in and around joints after the slightest trauma. Though the processes governing these reactions are little understood at present, a more logical explanation for the precipitation of calcium and the development of fibrosis in the vicinity of injured bones and joints has been advanced by Barille,[25] Wells,[26] Holt [27] and others, who believe that calcium salts normally in colloidal solution in the blood and tissues are soluble only because of a certain fixed content of carbon dioxide in these solutions. If the amount of carbon dioxide is decreased, salts precipitate and it can be readily conceived that in locations of low-grade metabolic activity such as necrotic areas, regions of fibrosis, thrombosed vessels or hemorrhage, little carbon dioxide is noted. Any fluids infiltrating these areas will have their carbon dioxide content reduced and calcium salts will be precipitated.

The practical inference to be drawn from these suggestions is that, in an injured foot in which a tendency to fibrosis and calcium deposition begins to be manifested, it is of primary importance to accelerate metabolism and increase the circulation as much as possible without manipulation of the injured parts, as the resultant trauma would exaggerate the tissue reactions.

Two other clinical considerations in regard to these hypertrophic reactions, which are the *bête noire* of surgeons treating joint fractures, demand attention. Without entering into any controversy with Nichols and Richardson [28] as to the etiologic factors responsible for their "degenerative form" of arthritis, or the adherents of Goldthwaite's [29] classification of "hypertrophic arthritis" or Ely's [30] "second type," we wish to insist that as soon as roentgenologic examination warns that hypertrophic changes exist, the patient must be at once studied and treated with a view to eliminating sources of focal infection and foci of toxemia. The rationale of eliminating foci of infection and the therapeutic effects to be expected are, of course, now well known. The clinical importance of toxemias, particularly those resulting from lower intestinal stasis and consequent protein putrefaction or carbohydrate fermentation, is now receiving increasing attention in the current medical literature. Whether these result from histamine, indole or the toxic amines of amino-acids arising from protein putrefaction, as firmly advocated by Hashimoto [31] and Albee,[32] or from altered carbohydrate metabolism, as Pemberton,[33] Fletcher,[34] and Foster [35] believe, every patient presenting the hyperplastic tendency should have the carbohydrate intake drastically restricted, while a sincere effort is made to overcome intestinal stasis by repeated colonic flushing and to change the bacterial flora both by implantations of *B. acidophilus* in the colon and its administration in large amounts orally.

TREATMENT

1. Reduction of deformity, if any exists, is most important in tarsal and metatarsal fractures. Even more important is the consideration of preventing plantar angulation, which, if not corrected, results in a callus pressing on nerves and delicate ligaments causing intractable metatarsalgia.

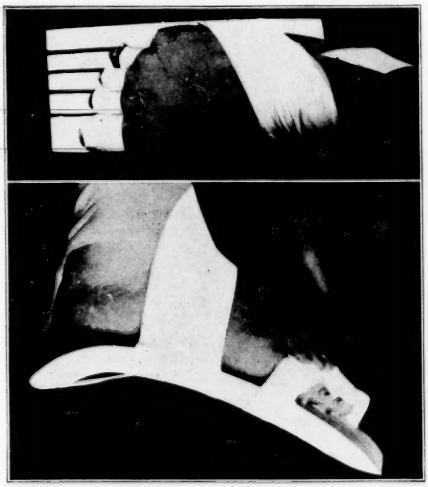
Both these indications can best be met by extension or extension plus manipulation: the less manipulation necessary the better.

14. Mouchet, Albert; and Rœderer, Carle: La scaphoidite tarsienne des jeunes enfants, Rev. d'orthop. **7**: 289, 308 (July) 1920.
15. Hirsch, Maximilian: Ueber isolierte subkutane Frakturen einzelner Handwurzelknochen, Deutsche Ztschr. f. Chir. **86**: 135-149 (Jan.) 1907; Ueber die Fortschritte in der Lehre von der Fraktur des Os naviculare carpi, Fortschr. a. d. Geb. d. Röntgenstrahlen **15**: 221-222 (July) 1910.
16. Pförringer: Eine besondere Form von Kahnbeinbruch der Handwurzel, Fortschr. a. d. Geb. Röntgenstrahlen **19**: 69-72 (Aug.) 1912.
17. Wollenberg, G. A.: Knochencyste im Os naviculare, Berl. klin. Wchnschr. **48**: 616-618 (April) 1911.
18. Müller, Walther: Ueber die Erweichung und Verdichtung des Os lunatum, eine typische Erkrankung des Handgelenks, Beitr. z. klin. Chir. (Bruns') **119**: 664-682, 1920.
19. Dwight: Variations of Bones of Hands and Feet, Philadelphia, J. B. Lippincott Company, 1907, p. 25.
20. Hahn, O.: Ueber centrole Destructionsherde des Os naviculare nach Trauma, Beitr. z. klin. chir. **121**: 704, 1921.
21. Speed, Kellogg: Traumatic Injuries of the Carpus, New York, D. Appleton & Co., 1925, pp. 128-135.
22. Freiberg, A. H.: Infraction of the Second Metatarsal Bone, Surg. Gynec. Obst. **19**: 191-193 (Aug.) 1914.
23. Rost, F.: Pathological Physiology of Surgical Diseases, Philadelphia, P. Blakiston's Son & Co., 1923, p. 446.
24. Axhausen, G.: Klinische und histologische Beiträge zur Kenntnis der juvenilen Arthritis deformans coxae, Charité-Ann. **33**: 414-422, 1909.
25. Barille, A.: De l'action de l'acide carbonique sous pression sur les phosphates metallique, J. de pharm. et de chim. series 6, **19**: 14, 71, 196, 245 and 295, 1904; series 7, pp. 1, 342, 910.
26. Wells, H. G.: Chemical Pathology, ed. 5, Philadelphia, W. B. Saunders Company, 1925, pp. 486-497.
27. Holt, L. E.; La Mer, V. K., and Clown, H. B.: Studies in Calcification, I, II and III, J. Biol. Chem. **64**: 509-587 (April) 1925.
28. Nichols, E. H., and Richardson, F. L.: Arthritis Deformans, J. M. Research **21**: 149 (June) 1909.
29. Goldthwaite, J. E.: Infectious Arthritis, Boston M. & S. J. **110**: 363 (March 31) 1904.
30. Ely, L. W.: Inflammation of Bones and Joints, Philadelphia, J. B. Lippincott Company, 1923; Chronic Arthritis in Relation to Industrial Accident Cases, California & West. Med. **22**: 260-262 (June) 1924.
31. Hashimoto, H.: Blood Chemistry in Acute Histamine Intoxication, J. Pharmacol & Exper. Therap. **25**: 381-409 (June) 1925.
32. Albee, F. H.: Myofascitis, Am. J. Surg. **3**: 523-533 (Dec.) 1927.
33. Pemberton, Ralph: The Nature of Arthritis and Rheumatoid Conditions, J. A. M. A. **75**: 1759 (Dec. 25) 1920.
34. Fletcher, A. A.: Dietetic Treatment of Chronic Arthritis and Its Relationship to Sugar Tolerance, Arch. Int. Med. **30**: 106 (July) 1922.
35. Foster, G. L., and Pemberton, Ralph: Studies on Arthritis in Army, Arch. Int. Med. **25**: 231-282 (March) 1920.

Only two notable exceptions to this general rule of reduction by extension come to mind. In fractures of the os calcis the deformity must be overcorrected by powerful manipulation, breaking up the impaction if this exists and if such breaking up is necessary to secure overcorrection of the fractured neck. The other exception is fracture of the base of the fifth metatarsal with avulsion of the tubercle, which is produced by indirect violence causing sudden unbalanced contraction of the peroneus brevis muscles, which have been thoroughly studied by Foulerton and Stebbing,[36] Jones,[37] Brickner,[38] Sylvester,[39] Cotton[40] and Eisendrath.[41] In the latter, prolonged pain and disability are saved the patient by tacking the avulsed fragment back in place on the base of the metatarsal under the guidance of the roentgen ray, much as Tennant[42] has described doing in avulsed chips of finger phalanges.

2. Effectual immobilization preserving or exaggerating the concavity of the foot in slight supination with traction on the forepart of the foot relieves pressure on the crushed tarsals and their injured ligaments and joint cartilages and also maintains extension in metatarsals, thereby assuring alinement of their fractured shafts.

The most useful splint to be used as a routine in meeting the first two indications for treatment seems to us to be that recently developed by Dr. George G. Davis of Chicago for use in handling a large series of crushing fractures of the foot in the steel industry. The splint is made of a curved board about three-fourths inch in thickness. This is curved upward into the plantar concavity of the foot, the anterior end being sawed into separate projections, to which the toes are strapped with adhesive tape. The ball of the foot is firmly bound to the splint by adhesive and gauze bandages, and then the splint is sharply forced forward. This puts powerful extension on the heads of the metatarsals by pressure of the curved part of the splint against the sole of the foot just proximal to the heads of these bones. Some traction is also exerted by the adhesive strapping of the toes. The splint is then firmly fastened in position by bandages, and adhesive tape is passed around the posterior end and across the ankle joint in front. The extension thus exerted overcomes the pull of the muscles and ligaments on the crushed tarsals and extends the joint capsules and collateral ligaments of the tarsometatarsal and intertarsal joints to the maximum. Just as in the management of fractured fingers (Mock and Ellis[43]), the stretching of capsules and ligaments and the prevention of pressure on the crushed phalanges and fractured joint surfaces during healing is much more important in the restoration of function after healing of the fractures than is the consideration of maintaining exact reduction of bone fragments. Such a splint prevents all possibility of plantar angulation of the fractured metatarsal shafts, which is a point of great practical importance.



George G. Davis splint in position; dressings partially applied.

The general rule for the maintenance of splinting and extension with this appliance is four weeks, with a further period of from two to four weeks before weight is borne on the foot.

3. After reduction of deformity and proper splinting with extension, which are essential for the repair of the bone, the next consideration must be given to the lesions in the surrounding soft parts. Too much rest and too much pressure bring about degenerative changes.

One can be certain in foot injuries that any trauma sufficient to produce the smallest fracture has resulted in severe lesions of the soft parts. There is a certain amount of muscle laceration with hematoma formation within the muscles. The ratio of absorption of this hematoma is inverse to the amount of cicatricial tissue formation in the muscle. This absorption is hastened by two measures: heat and massage. Before the application of massage the injured member is exposed to heat rays from a radiant heat lamp or an infra-red generator or to electrically generated heat-diathermy. This induces a dilatation of the blood vessels and a fresh supply of arterial blood invades the area, promoting metabolism in the tissues. By massage we do not mean sending the patient to a masseur with the usual instructions for heat and massage. This is worse than improper reduction and splinting, as improper massage can do even more harm by continued insults to both bone and soft tissues. The kind of massage needed for this early treatment is superficial stroking with gentleness, judgment and patience. Any massage that causes pain is either too strenuous or too long continued.

In and around the tendons of the foot a serous exudation and hemorrhage occurs. This, in prolonged immobilization, will be organized into adhesions, often with obliteration of the tendon sheath spaces. Even

36. Foulerton, A. G. R., and Stebbing, G. F.: Fractures of Metatarsal Bones by Indirect Violence, Lancet **2**: 1225-1226 (Dec. 10) 1927.
37. Jones, R.: Fracture of Fifth Metatarsal Bone by Indirect Violence, Ann. Surg. **35**: 697 (June) 1902.
38. Brickner, W. M.: Fracture of the Base of the Fifth Metatarsal Bone by Indirect Violence, Am. J. Surg. **20**: 306 (Oct.) 1906.
39. Sylvester, C. S.: Fracture of Fifth Metatarsal by Inversion, Boston M. & S. J. **149**: 735 (Dec. 31) 1903.
40. Cotton, F. J.: Fracture of the Fifth Metatarsal Bone by Inversion, Boston M. & S. J. **155**: 229 (Aug.) 1906.
41. Eisendrath, D. N., in Keen's Surgery, Philadelphia, W. B. Saunders Company **2**: 279, 1914.
42. Tennant, C. E.: Chip Fractures of Fingers, J. A. M. A. **74**: 194 (Jan. 17) 1920.
43. Mock, H. E., and Ellis, J. D.: Treatment of Fractures of Fingers and Metacarpals with a Description of the Authors' Finger Caliper, Surg. Gynec. Obst. **45**: 551-556 (Oct.) 1927.

slight early motion will prevent these tendon sheath adhesions. Motions are usually described as active and passive. Passive motions are hard to obtain, as the patient always exerts some muscular effort. Assistive movements are those most useful in the early stage and are muscle movements in which the operator assists the patient. These must be carried out with care, and if the pain increases or motions decrease, treatment has been carried too far.

The ligaments may be torn in the direction of their fibers, in which case normal motion will tend to approximate the edges. If there is a true rupture of ligaments, this occurs almost always at an osseous attachment. The x-ray usually reveals a small piece torn from the cortex of the bone.

If the fracture extends into a joint there is a hemarthrosis, and there is also a tear in the capsular ligament and the synovial membrane. If it can be accomplished without displacement of the fragments, early motion may permit the hemorrhage to be forced out of the joint and greatly reduce the possibility of an adhesive synovitis.

4. Before considering removal of the splint it must be emphasized again that the x-ray evidences of fractures in the foot mean great injury to the soft parts. Splinting and lack of use for some weeks induce considerable atrophy, even if massage and early motion minimize this. The strength of the foot is dependent on muscle tone and, if early weight bearing is allowed, disaster will follow. Too often a splint is removed and the patient directed to use the foot. Frequently this foot has been elevated most of the day; now the supports are removed and it is dependent. The foot swells, so an old slipper is used by the patient, and thus even the usual support of a stiff-soled shoe is lacking and soon a metatarsalgia develops. As soon as weight bearing is allowed, therefore, it must be seen that the patient wears correct shoes properly fitted. Both arches should be supported with felt pads, properly cut and beveled to fit. Felt pads give support, and as they are resilient they aid in the massage of the plantar surface of the foot in walking.

5. Heat, massage, exercises and the use of the sinusoidal current are now indicated to aid in restoring the venous and lymphatic circulation. This reduces muscular spasm and edema and strengthens the muscles.

Heat may be applied with a baker, a radiant heat lamp, diathermy or contrast baths. Diathermy in foot conditions is generally not worth the trouble it takes to apply it, and in a foot with lessened sensation from edema it may produce a serious burn,

Massage may now be deep, with kneading, friction and petrissage. Resistive movements should alternate with massage. As the essential factor in posttraumatic flatfoot is weakened and stretched invertors with strong and contracted evertors, the resistive movements are directed toward resisting the motion of the invertors. Inversion in flexion of the foot is produced by the tibialis anticus muscle, and resistive motion to strengthen this muscle is made with the fingers surrounding the base of the toes on their dorsal aspect and pulling while the patient flexes the foot dorsally. Inversion in extension is produced by the tibialis posticus muscle, and this is strengthened by resisting inward motion of the foot at the big toe when the foot is extended.

Exercises should be carefully prescribed, as much harm has been done in foot injuries with weakened muscles by giving inexact directions for exercises, so that the patient starts exercise with weight bearing without proper arch supports. All weight-bearing exercises should be performed in proper shoes with arch supports in position. Prior to this, exercises should be given in the sitting position. The patient should be instructed to give careful attention to his walking, with the feet slightly inverted and the toes pointing straight forward. At all times when sitting the legs should be crossed and the feet in complete inversion, resting on the outer borders to stretch the principal evertors, the peroneus longus and brevis muscles.

For example, we give written instructions to the patient for home exercises as follows:

First: Sitting feet bare, legs crossed, so one leg hangs free. Do foot circle by first plantar flexing ankle; push down with toes; turn foot inward; and then complete by dorsally flexing ankle strongly.

Second: With legs crossed, the patient gives anterior part of his foot a strong pull inward to stretch contracted peroneus muscles.

Third: Sitting feet parallel on a towel. Draw towel toward heel with the toes.

These exercises are given before weight bearing is allowed and are continued with the addition of the following with arch supports and shoes on the feet:

First: Practice in walking with feet pointing straight forward and slightly inverted.

Second: Walk slowly on outer borders of feet, toes turned inward.

The sinusoidal current for muscle stimulating has a definite place in the after-treatment of these injuries as a preliminary to voluntary exercise. It is often extremely difficult to develop the weakened invertors and the small muscles of the foot by voluntary exercises alone, especially in patients with atrophy of disuse after long immobilization.

Manipulation of any stiffened joints of the foot under an anesthetic is almost invariably a mistake. Generally within a week following this treatment such joints are stiffer than before or, if still movable, remain far too painful for function. This is particularly true in those injuries which have shown a "hyperplastic reaction."

SUMMARY

1. The foot is a specialized organ in man and therefore needs as great care in its treatment after injury as the hand.

2. Atrophic bone reactions and deformities may be prevented by proper splinting and extension.

3. Hypertrophic bone changes, ischemic paralysis, loss of muscle tone and ankylosis are lessened by early physical therapy.

4. The combined treatment of early reduction and proper splinting, with extension, physical therapy and elimination of focal infections and sources of toxanemia, will reduce the temporary and permanent disabilities of these fractures.

122 South Michigan Avenue—47 East Superior Street.

Relation of Mental Unsoundness and Criminal Responsibility.—In spite of the long-standing disagreement between the legal and medical professions on the question of the relationship of mental unsoundness to criminal responsibility and punishability, there is some evidence that the differences between the two professions are giving way before a spirit of intelligent cooperation.—Glueck, Sheldon: *Mental Hygiene* **11**:287 (April) 1927.

V 9
192

EYE INJURIES BY AIR GUNS AND SLING SHOTS

REPORT OF THREE CASES *

FRANK H. RODIN, M.D.
AND
ALBERT B. McKEE, M.D.
SAN FRANCISCO

Injuries to the eyes by the indiscriminate use of air guns and sling shots by children is well illustrated by the following three cases seen in one month, two of which came to our attention in one day.

REPORT OF CASES

CASE 1.—*Injury of right eye by BB shot. Foreign body in orbit.* H. B., a boy, aged 16 years, seen, Dec. 6, 1927, had been struck in the right eye by a BB shot from an air gun, the previous day, while playing with boys. The vision of the right eye was 15/200. There was moderate palpebral and bulbar conjunctival injection and lacrimation. No perforation was seen. The fundus examination showed a normal disk and macula; toward the nasal side there was a large edematous area of the retina, in the center of which was a longitudinal white area, 3 to 4 by 1/2 disk diameters in size, apparently a rupture of the choroid. A roentgenogram showed (figs. 1 and 2) a foreign body, 5 by 5 by 5 mm., 15 mm. back of the center of the cornea, 1 mm. above, and 15 mm. to the nasal side; the foreign body lying just mesial to the eyeball, and just behind the equator. The patient was admitted to the hospital and treated with instillations of atropine, 1 per cent, and cold compresses; he was discharged three days later.

December 20, the eyeball was white and free from injection; vision was 15/100. The vitreous was full of black opacities, old hemorrhage which was being absorbed. Just in front of

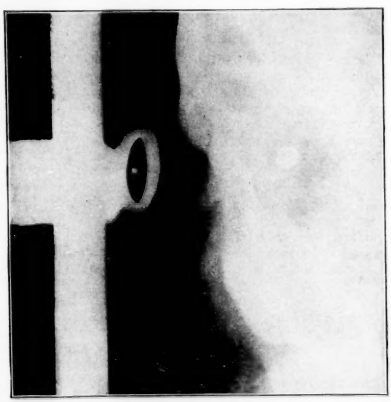


Fig. 1 (case 1).—Foreign body in orbit.

the plica semilunaris was seen the shot, partly projecting through the conjunctiva at the place where it apparently entered. It was removed with a chalazion curet. It was round (fig. 3), 5 mm. in diameter, and weighed 552 mg. (8½ grains).

March 12, 1928, the vision of the right eye was 15/40. No vitreous opacities were seen. One and one-half disk diameters from the nasal margin of the disk was seen a pigmented black area, 2 by 3 disk diameters in size. The fundus for a short distance around this area was poorly colored, small areas of very light hue alternating with normal fundus. From the nasal margin of this black mass, at 3 on the clock dial, was seen a ribbon-like white area, about 1 disk diameter in width, and extending horizontally toward the periphery of the retina. The margins of this area were pigmented, while the area itself was white, here and there faintly covered with dark pigment. A small, light pink blood vessel ran through the center of this area, a contracted retinal blood vessel; otherwise the area was free of blood vessels. This was the rupture of the choroid seen at the first examination.

CASE 2.—*Injury of left eye by BB shot. Foreign body in orbit.* N. C., a boy, aged 11 years, seen, Jan. 3, 1928, had been behind a box, three days previously, while his playmate

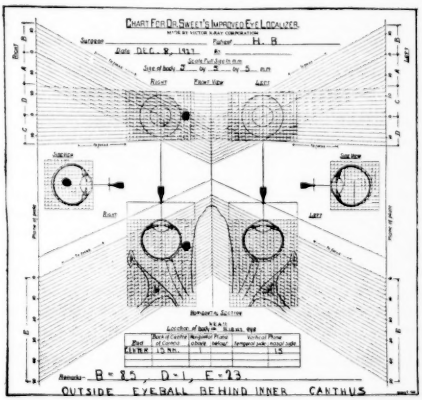


CHART FOR DR. SWEET'S IMPROVED EYE LOCALIZER
Surgeon
Patient H. B.
Date DEC. 8, 1927
Size of Body 5 by 5 by 5 mm.
Right Front View Left
Remarks B-2.5, D-1, E-23.
OUTSIDE EYEBALL BEHIND INNER CANTHUS

Fig. 2 (case 1).—Location of foreign body in right orbit.

was shooting with an air gun at a target beyond the box. As the shot was fired, the patient raised his head. He felt something strike his left eye and found that he was unable to see with that eye. The patient did not think that the shot entered his eye.

The vision of the right eye was 15/15; of the left, 15/100. The left eye was tender and there was marked ciliary injection. No perforation was seen. The disk was highly colored and its nasal margin indistinct. The retina was of a highly red color with a few areas of a lighter hue. A roentgenogram was taken on two sets of plates, as the patient did not cooperate well. These showed a rounded foreign body of metallic density, and 5 mm. in diameter, in the region of the left orbit. The first set of plates showed the center of the foreign body to be 7 mm. back of the center of the cornea, 10.5 mm. below the horizontal plane and 5 mm. to the temporal side. The second set of plates showed the center of the foreign body to be 6.5 mm. from the center of the cornea, 12 mm. below and 2 mm. to the temporal side. Calculations showed that the foreign body was outside the eyeball: it being 12.7 mm. from the center of the eyeball according to one set of plates, and 13.3 mm. according to the second set. Instillations of atropine, 1 per cent, were prescribed.

January 10, the vitreous was full of opacities in large sheets and as fine dustlike particles, old hemorrhage being absorbed.

January 31, the vision was 15/70+. The eye was quiet. There were still many vitreous opacities present.

February 27, the vision was 15/50. Vitreous opacities were still present. There was a pale ring, one-third disk diameter in size, around the disk; beginning circumpapillary atrophy. The choroidal pigment of the fundus was markedly disturbed, irregular pale areas alternating with areas of normal color.

The presence of a foreign body in the eye in these cases was suspected from the history, but the diagnosis

* From the Division of Ophthalmology, Stanford University, School of Medicine.

was made by the roentgen ray. In both cases there was a shot that entered the orbit: in case 1 to the nasal side of the right eye, and in case 2 to the temporal side of the left eye. These entered without penetrating the eyeball. The trauma to the eyeballs caused by entry of shots was shown by the extensive hemorrhages in the vitreous, and by the rupture of the choroid in case 1.

The treatment of such injuries to the eye have been best summarized by Dr. H. V. Würdemann:[1]

> Aseptic foreign bodies may enter the orbit, cause but little reaction, becoming encapsulated and remain for years; especially to be noted is the occurrence in this locality of shot pellets and pistol balls . . . If a foreign body be aseptic and cause no inconvenience for some weeks, there is no reason why it should not remain for an indefinite period . . . Small metallic objects, as shot pellets, bullets, chips of iron, copper, stone, etc., may be left alone to become encapsulated.

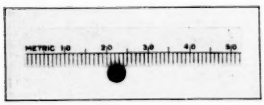


Fig. 3 (case 1).—The foreign body.

This is well illustrated by case 1, in which there was a spontaneous extrusion of the foreign body sixteen days after the injury without any reaction on the part of the eye, while in case 2 the foreign body had been in the orbit for two months with no reaction.

CASE 3.—*Injury of the left eye by sling shot. Traumatic cataract. Iridodialysis.* J. D., a boy, aged 8 years, seen Jan. 3, 1928, had been struck in the left eye with a staple from a sling shot, while playing Indian with boys, a week previously. There was much pain and the eyeball was bloodshot; the redness was clearing up, but the vision was poor.

The vision of the right eye was 15/15; of the left, fingers at 2 feet. Examination of the left eye showed (fig. 4) that there was no evidence of corneal abrasion or opacity. The anterior chamber was of normal depth, except in the upper nasal quadrant, from 9 to 11 on the clock dial. Here the iris

Fig. 4 (case 3).—Appearance of left eye showing the dislocated lens and the iris torn from its ciliary attachment in the upper nasal quadrant.

was atrophic and pushed forward, almost against the cornea, and torn from its ciliary attachment (iridodialysis); there were no anterior synechiae. The lens was swollen, cataractous, and dislocated back of the iris at the upper nasal quadrant.

February 10, the vision of the left eye was hand movement. The cataractous lens was being broken up and the lens matter filled the pupillary area.

In this case the trauma ruptured the capsule of the lens and the blow drove the lens against the iris in the upper nasal quadrant, where the iris was torn from its ciliary attachment.

SUMMARY

1. In three cases of injury to the eyeball, two were caused by BB shot with a foreign body in the orbit, and the third by a sling shot causing a traumatic cataract and iridodialysis.

2. The presence of the foreign body in the orbit was diagnosed by the roentgen ray.

3. In one case the foreign body was spontaneously extruded sixteen days after the injury; in the other case the foreign body has been in the orbit for two months with no reaction on the part of the eye.

4. A roentgenogram should be taken of all injuries to the eye by shots.

5. The indiscriminate use of air guns and sling shots by children should be discouraged.

490 Post Street—Stanford University Hospital.

1. Würdemann, H. V.: Injuries of the Orbit, in the American Encyclopedia and Dictionary of Ophthalmology, Chicago, Cleveland Press **12**: 9126-9130, 1918.

A CASE OF ADDISON'S DISEASE WITH UNUSUAL AUTOPSY OBSERVATIONS*

WILLIAM H. HIGGINS, M.D.
RICHMOND, VA.

The medical history and observations of physical conditions on which this discussion is based are unusual in that accurate data have been available over a period of fifteen years. During this time the patient was under the supervision of competent physicians, to whom I am indebted for their observations.

REPORT OF CASE

History.—An intelligent white woman, aged 50, who entered St. Elizabeth's Hospital in February, 1927, complaining of general weakness, nausea and slight pain in her back, stated that during the past year she had had frequent attacks of nausea and diarrhea which she attributed to food poisoning. The nausea was relieved by the taking of food, but roentgen-ray examinations and other studies had not revealed an ulcer. At times she had spit up clots of blood and had lost about 30 pounds (13.6 Kg.). During this period she had also noticed a progressive brownish tinge to her skin with areas of deep pigmentation scattered over the entire body. She complained of excessive weakness and was markedly depressed. She lived only five days after entering the hospital, during which time the temperature ranged from 100 to 105 F. and the pulse rate was well above 100 beats a minute.

Physical Examination.—The patient was emaciated, and presented rather remarkable areas of pigmentation. The entire skin had a peculiar soft velvety consistency and a uniform olive tint, but over the exposed surfaces and the axillae, abdomen and flanks, the pigmented blotches were particularly well marked. The tongue and the mucous membranes of the mouth also showed similar areas of pigmentation. There was a moderate degree of pyorrhea alveolaris.

The lungs showed evidences of a chronic tuberculous process in both apexes. The heart was essentially normal but the blood pressure was 92 systolic and 60 diastolic. There was slight cyanosis of the finger tips. The pulse rate was 28 to the quarter.

The abdomen was normal with exception of a palpable right kidney which was not tender on pressure. There was slight edema of both ankles. The examination otherwise was negative.

* From the Medical Department, St. Elizabeth's Hospital.
* Read before the Richmond Academy of Medicine and Surgery, Jan. 10, 1928.

Laboratory Examinations.—The hemoglobin was 75 per cent; the red blood count, 3,520,000; the white blood count, 4,000; neutrophils, 68; small lymphocytes, 15; large mononuclears, 4; eosinophils, 5, and myelocytes, 8. The clotting time was six minutes. The Wassermann test was negative. Urinalysis was essentially negative and the phenolsulphonphthalein output for two hours was 85 per cent.

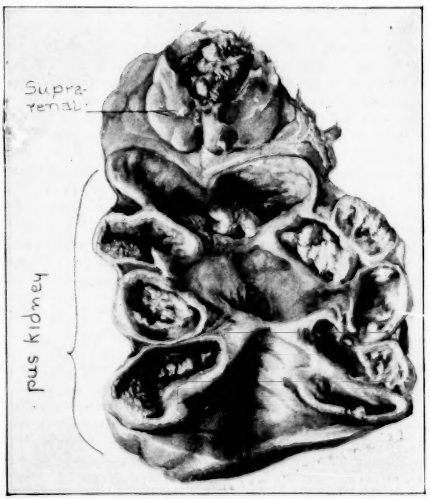


Fig. 1.—Inner portion of the right kidney with the attached right suprarenal gland. There is practically complete destruction of the kidney parenchyma, which is replaced by many smoothly lined pockets and sacs containing caseous material—a typical advanced tuberculous process. The right ureter is completely obstructed. At the upper pole of the kidney is seen the enlarged and adherent suprarenal, which also shows practically complete destruction by a similar tuberculous process.

Treatment and Course.—The patient was placed on the Muirhead treatment for Addison's disease but died within five days without showing any response to the epinephrine therapy.

Following her death it was discovered that she had been under treatment by several physicians over a period of many years for conditions bearing on her recent illness. From childhood until 1912 she suffered from chronic otitis media, and at this time she consulted Dr. Lewis Bosher, who found a pyelitis and an enlarged right kidney. In 1919 she was examined by Drs. Beverly Tucker, J. M. Hutcheson and Lawrence Price, all of Richmond, Va., when her symptoms were largely of a functional nature, such as numbness in the back of the neck, inability to swallow, hysteria and insomnia. They, however, found a tuberculous involvement of the lungs together with an infected right kidney, for which removal was recommended but refused. In 1921 a cystoscopic examination by Dr. Price showed a normally functioning left kidney but a definite obstruction in the right ureter which prevented further studies of the right kidney. A roentgenogram at that time revealed a large right kidney with a few shadows which were supposed to be calcified areas. A diagnosis of cystic kidney was made. Dr. Hutcheson last saw her in June, 1926, at which time the lungs continued to show slight activity but the urinalysis was practically negative. The blood pressure then was 132 systolic and 80 diastolic.

Necropsy.—Shortly after her death a necropsy, limited to an abdominal incision, was made by Dr. J. Shelton Horsley, Jr. His report was in substance as follows: There was moderate dilatation of the stomach, a few adhesions of the gallbladder to the surrounding tissues, a rather pale liver resembling one of starvation and a small spleen which was very friable. The left kidney was dissected out and found normal. The left suprarenal gland was adherent to the surrounding fat and very much atrophied. There were many adhesions in the region of the right kidney which made its removal difficult, but it was found slightly larger than normal and entirely studded over with irregular nodules, light yellow and soft. The suprarenal gland was adherent to this kidney mass and was very much larger than normal. It had the appearance of a direct extension of the renal inflammatory substance into the closely adherent suprarenal. At its inner and upper portion it was very friable and presented a sort of caseous process. This caseous portion was densely adherent to the portal vein and could not be removed without cutting into the vein. The right kidney (fig. 1) was removed intact and on section showed a practically complete destruction of the entire renal substance, many pockets and sacs with a smooth lining and filled with a light yellowish material about the consistency of cheese. No normal kidney parenchyma could be found, and there appeared to be a complete obstruction of the right ureter. Sections of the lungs, kidney, spleen and both suprarenals were taken for microscopic study. The pathologic diagnosis was advanced tuberculous destruction of the right kidney, hemorrhagic congestion of the spleen with blood pigment, tuberculous pulmonary fibrosis, and a chronic tuberculous fibrosis of both suprarenals (figs. 2 and 3).

In brief, here was a patient who probably had had a tuberculous involvement of some portion of her body since childhood. There was a history of a chronic otitis media for approximately twenty-five years, a pyelitis definitely present for fourteen years, a pulmonary tuberculosis for at least seven years, and an involvement of the suprarenal glands for six months.

When the records of the last physical examination are compared with those of the previous examinations, it would appear that she had successfully resisted the earlier tuberculous invasions and had succumbed only after the suprarenal glands had become involved. The right kidney was

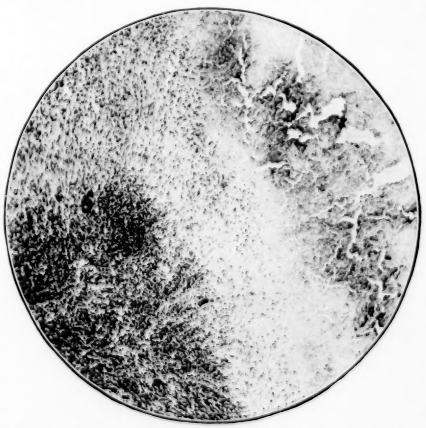


Fig. 2.—Right suprarenal showing complete destruction of parenchyma and replacement by caseation, fibrous tissue, round cells and endothelial cells—a typical picture of tuberculosis; slightly reduced from a photomicrograph with a magnification of 50 diameters.

only a mere fibrous shell but was shut off from presenting any urinary evidence of its presence by an obstructed ureter. One may reasonably conclude from the gross appearance of this kidney and the suprarenal gland that the tuberculous process had actually extended across by direct continuity

from the former to the latter organ, thus precipitating the condition which ultimately caused her death. Although it is not known by what process the suprarenal glands become infected, it is reasonable to presume that, had the tuberculous kidney been removed, Addison's disease may not have developed.

The term Addison's disease is a clinical concept and not a definite pathologic entity. Thomas Addison's monograph[1] appeared in 1855, although the oldest record of a probable case[2] was in 1554. Its rarity is shown by the statement of Osler[3] that only seventeen cases were seen in twenty-one years in the United States.

ETIOLOGY

Little is known as to the actual causative factors in the production of this disease. It is known that animals die following the removal of the suprarenal glands and show evidences of hypotension and asthenia, but there is no theory which will account for all the symptoms. The cause of the pigmentation is unknown. Some have believed that the high sulphur content of the blood with

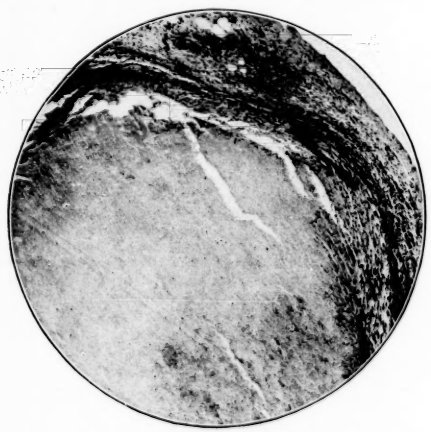


Fig. 3.—Left suprarenal showing a similar tuberculous process to that of figure 2; slightly reduced from a photomicrograph with a magnification of 50 diameters.

the malanoderma may be a factor. Bittorf[4] thought that the bronzing of the skin was due to an increased amount of oxidase in the skin.

In an effort to ascertain the etiology it may be mentioned that tuberculosis of the suprarenals is by far the most common observation at autopsy; rarely have nervous excitement, malignant growths, pressure on the suprarenal veins, syphilis, lymphadenoma and mycosis fungoids been recorded as possible causative factors. It is generally a disease of middle life but is occasionally found in infants.

To account for all the manifestations of this disease one is forced to assume that there is a primary involvement of the chromaffin system and not the suprarenal glands alone. These nerve cells of the semilunar ganglions have been found degenerated and deeply pigmented and the nerves sclerotic. The ganglions are not uncommonly entangled in the cicatricial tissue about the suprarenals. Cases of Addison's disease have been reported in which there was an entire absence of the chromaffin cells but the suprarenal glands were normal, and there have been other instances of advanced tuberculous degeneration of the glands in patients who did not give any history of the addisonian syndrome.

Wakefield and Smith[5] have called attention to temporary impairment of the suprarenal glands producing the classic symptoms of suprarenal insufficiency. They believe that a true toxic suprarenalopathy may follow an infection such as influenza from which recovery may take place. Loeper[6] has also called attention to symptoms of acute suprarenal insufficiency following typhoid inoculations, and Carles[7] has reported instances of war dyspepsia which were supposed to be due to the same cause.

Laboratory studies offer little in the diagnosis of Addison's disease. Addison thought that anemia was a constant feature of the disease but subsequent authors, including Osler, have had a different experience. Other than disclosing a hypo-epinephrinemia, blood studies have not been particularly fruitful.

The treatment of true Addison's disease is wholly unsatisfactory. The relation of the suprarenal glands to the disease is not comparable to that of the thyroid gland to myxedema because of the involvement of the chromaffin system and the usual tuberculous nature of the case. Recently Rowntree[8] reported encouraging results from the Muirhead treatment, the principle of which is the frequent administration of epinephrine hypodermically and by rectum, and of the whole gland or cortex by mouth to the point of tolerance. It is reasonable to assume that the so-called toxic cases manifesting the addisonian syndrome following acute infections may respond favorably to substitution therapy. Little, however, can be hoped for those cases similar to the one reported here, in which there is an extensive tuberculous involvement of the suprarenal glands and probably of the entire chromaffin system.

617 West Grace Street.

1. Addison, Thomas: Anemia: Disease of the Suprarenal Capsules, London M. Gaz. **43:** 517, 1849.
2. Marañón, G., quoted by Wakefield and Smith (footnote 5).
3. Osler, William; and McCrae, Thomas: Principles and Practice of Medicine, ed. 10, New York, D. Appleton & Co., 1925, p. 882.
4. Bittorf, A.: Ueber die Pigmentbildung beim Morbus Addisonii, Deutsches Arch. f. klin. Med. **136:** 314 (July) 1921.
5. Wakefield, E. G., and Smith, E. E.: Addison's Disease, Am. J. M. Sc. **174:** 343 (Sept.) 1927.
6. Loeper, M.: Typhoid Vaccinations and Suprarenal Reactions, Presse méd. **24:** 463 (Oct. 19) 1916.
7. Carles, J.: L'insuffisance surrénale chez le combattant, J. de méd. de Bordeaux **89:** 185 (July) 1918.
8. Rowntree, L. G.: Studies in Addison's Disease, J. A. M. A. **84:** 327 (Jan. 31) 1925.

Endemic Goiter and Iodine.—Briefly, we have never seen an authentic case of hyperthyroidism in children that could by any stretch of the imagination be attributed to the prophylaxis of goiter through the schools. This point seems agreed upon by all. However, the old argument about longstanding goiters in adults put forth by Rilliet in 1858 seems to live on. . . . Every survey or study only emphasizes the importance of prevention during pregnancy. The relation of these congenital defects to the adenomatous or tumorous conditions of later life is more and more appreciated with each careful study. We all know the disappointments in our attempts to control or treat these tumorous thyroids. Therefore, we cannot stress this point too strongly, and in endemic districts we need the assistance of all prospective mothers and of the physicians who educate and direct them through this important period. It is during pregnancy that the general use of iodized salt is of greatest value. For those under the supervision of their physicians or those who accept the responsibility themselves, one or two iodostarin tablets a week throughout pregnancy and lactation would be excellent.—Kimball, O. P.: Endemic Goiter and Public Health, *Am. J. Pub. Health,* May, 1928.

CARCINOMA OF THE ISLANDS OF THE PANCREAS

HYPERINSULINISM AND HYPOGLYCEMIA *

WILLIAM THALHIMER, M.D.
AND
FRANCIS D. MURPHY, M.D.
MILWAUKEE

Recently Wilder, Allan, Power and Robertson [1] reported a primary tumor of the pancreas which they proved conclusively to be a carcinoma arising from the islands of Langerhans, with metastases in the liver and lymph nodes. The patient suffered from hyperinsulinism, as indicated by the extremely low blood sugar values and the development of severe insulin shock unless he regularly received large amounts of carbohydrates. These investigators also assayed the insulin content of the tumor metastases in the liver, and found them to contain at least 40 units of insulin to each hundred grams of metastatic tumor, whereas portions of noncarcinomatous liver tissue were found to contain little or no insulin. In addition to this, the microscopic appearance of the tumor cells resembled the cells of the islands of Langerhans. The study of this case, clinically, pathologically and biochemically, was extremely complete and thorough, and can well serve as a guide for similar investigations. This is the first time that spontaneous hyperinsulinism caused by a carcinoma arising from the islands of Langerhans and its symptom complex has been recognized clinically. Also, it is apparently the first instance in which a malignant condition of the islands of Langerhans has been demonstrated.

Recently we had an opportunity to observe a case in which the condition was in several respects very similar, and which therefore seems worthy of reporting. The pertinent literature can be found reviewed in the paper of Wilder and his co-workers, and their discussion and comments make it unnecessary for us to do more than report the essential features in the clinical course of the patient we observed.

This patient had severe spontaneous hypoglycemia, as was shown by blood sugar determinations on three different occasions. Unfortunately, the significance of the spontaneous hypoglycemia was not recognized during the patient's life, and therefore the clinical study is very incomplete. At necropsy the only significant finding was a small tumor, 1 by 1.5 cm., in the body of the pancreas. On microscopic examination this tumor was found to be composed of cells similar to those found in the islands of Langerhans, and we have concluded that the patient's extreme hypoglycemia and other symptoms may properly be attributed to the active secretion of insulin by these tumor cells.

REPORT OF CASE

History.—A white woman, aged 57, brought to the Milwaukee County Hospital by ambulance, July 18, 1927, was in a stuporous state and unable to answer questions, although she was not unconscious. The following history was obtained from a son: In 1922 the uterus had been removed because of fibroids (a detailed report of the operation could not be obtained). About two and one-half years before admission (January, 1925) she began to have attacks characterized by somnolence, followed by great restlessness and irritability. The attack would last about one day, and on the following day she usually slept most of the time. In the beginning the attacks came at regular intervals, varying from two weeks to two months. During the last year they came more frequently and averaged about three a week until one month prior to entering the hospital, when she began to have them every day. For the past year epileptiform convulsions accompanied these attacks, but she did not foam at the mouth or completely lose consciousness during the attack.

Physical Examination.—The patient was poorly developed and appeared aged considerably beyond her years. The heart and lungs were normal. No masses, areas of tenderness or distention were found on examination of the abdomen. The uterus and adnexa had been removed. There were no fractures of the skull, and no tumors were revealed by a roentgenographic examination of the brain. The spinal fluid appeared normal.

Ophthalmoscopic examination did not show any abnormalities.

The blood pressure was 135 systolic and 85 diastolic.

After entrance to the hospital, the patient remained in a semiconscious state most of the time. There were infrequent intervals when she seemed brighter and could tell us that she had no pain or distress of any kind, but that she felt very tired and wished to be allowed to sleep. The seizures came regularly every forenoon about 9 o'clock. They were not severe and were not accompanied by stertorous breathing, unconsciousness, cyanosis or foaming at the mouth. Usually the attack lasted from thirty minutes to an hour. Following this she slept for a few hours but could be aroused. Although she perspired mildly after the convulsions, it cannot be said that this was more than a minor symptom of the disease. There was no evident relationship between the ingestion of food and the periods of partial relief.

Fig. 1.—Gross appearance of the cut surface of the bisected tumor. Actual size, 1 by 1.5 cm.

Laboratory Data.—The hemoglobin was 16 + Gm. per cubic centimeter; the white blood cells numbered 5,200, and the red cells, 4,660,000. The differential count was: neutrophils, 50; lymphocytes, 46, and endothelial leukocytes, 4.

July 7, 1927, the nonprotein nitrogen [2] was 34.8 mg. per hundred cubic centimeters of blood; the urea nitrogen, 27.1 mg.; the blood sugar, too low to read, and creatinine, 1.6 mg.

July 21, the blood sugar was 60.6 mg.; August 13, it was 33.5 mg.

The spinal fluid showed a cell count of 30; a negative Wassermann reaction, and a colloidal gold curve of 3455555420.

There were no abnormal constituents in the urine.

During the second week of August the convulsions came on about three times a day; following each attack the patient sank into a state of coma and slept several hours.

August 18 she was in a state of coma all day and died at 3:15 p. m.

Necropsy Protocol.—Necropsy was performed, August 19, at 1 p. m. There was marked rigor mortis and postmortem discoloration. The scar of an old, median laparotomy incision extended from just below the umbilicus to just above the symphisis pubis. There were no other significant marks on the body.

The peritoneal cavity did not contain any free fluid. The surfaces were everywhere smooth and glistening.

The uterus and adnexa were missing, but the stump of the cervix was at its normal situation. It projected slightly from the floor of the pelvis, was normal in size, and, whereas its superior surface was a bit puckered, it was smoothly covered with peritoneum, as was the entire floor of the pelvis. The cervix and vault of the vagina were removed in one piece and carefully opened, but no other abnormality was found.

The pelvic and retroperitoneal lymph nodes did not show any abnormality.

* From the Medical Clinic and Laboratories of the Milwaukee County Hospital.

1. Wilder, R. M.; Allan, F. N.; Power, M. H., and Robertson, H. E.: Carcinoma of the Islands of the Pancreas: Hyperinsulinism and Hypoglycemia, J. A. M. A. **89**: 348-355 (July 30) 1927.

2. The Folin Wu method was used for determining the blood sugar, nonprotein nitrogen and creatinine, and the Marshall whole blood urease method for determining the urea nitrogen.

The liver was normal in size; its surface was smooth and glistening and the cut surface dark brownish red, and it did not show any special abnormality.

The gallbladder was normal in size, and in all other respects.

The pancreas was normal in size and appearance, except that about 4 cm. from the tail end, at about the junction of the tail with the body of the pancreas, there was what appeared to be a tumor nodule 1.5 by 1 cm. This projected slightly above the surface of the pancreas. On section it proved to be ovoid; it cut firmly and was creamy white. Its margin was quite well demarcated, as though incompletely encapsulated,

Fig. 2.—Microscopic appearance of sections stained with hematoxylin and eosin; reduced from a photomicrograph with a magnification of 50 diameters.

but the tumor seemed to be invading the surrounding pancreatic tissue. No metastases were found in this region or anywhere else.

The spleen was normal in size and appearance.

The kidneys were normal in size. Their capsules stripped with comparative ease, exposing a fairly smooth, glistening surface that showed only the earliest beginning of a very slight, finely granular appearance. On section the cortex seemed a bit narrower than normal, but except for this the kidneys did not show other abnormalities.

An incision was made into each side of the diaphragm, and the contents of the chest were investigated by palpation. The lungs were not adherent, were normal in size, did not contain any nodules or areas of consolidation, and appeared to crepitate throughout. No abnormal condition or mass was felt in the mediastinum, and the heart felt normal in size and in position.

The leptomeninges of the convexity of the brain showed a slight or moderate amount of edema, and moderate congestion of the blood vessels. The brain was removed and carefully sectioned, and no other abnormality found. The pituitary gland was normal.

Apart from the pancreatic tumor there were no significant pathologic changes revealed by microscopic studies of the various tissues of the body.

Microscopic study of the tumor nodule showed the typical structure of tumors in general. The parenchymatous tissue, which in this case was composed of cells which appeared to be identical with the cells of the islands of Langerhans, was supported throughout by a framework of irregular strands of rather dense connective tissue, so that the tumor was divided up into irregularly shaped masses and strands of cells. In certain places the connective tissue strands isolated small groups of tumor cells which were identical in appearance with normal islands of Langerhans. In other places one might find groups of a few cells which were larger than normal island cells, were irregular in shape, had enlarged, hyperchromatic nuclei, and were definitely atypical in appearance, as if about to undergo proliferation. However, typical mitotic figures were not found. A fairly definite capsule of connective tissue surrounded the nodule but did not completely confine the tumor cells, since they appeared to be breaking through it in certain places.

A number of areas in the tumor and at its edge appeared very suggestive of a malignant condition characterized by slow growth and invasion.

COMMENT

As has been stated, the microscopic evidence seems to show that this case presents a tumor arising from the cells of the islands of Langerhans. In the absence of metastases it is difficult to determine whether it should be classified as a carcinoma of a low grade of malignancy or as an adenoma, although we believe it to be a carcinoma of a low grade of malignancy. The important point is that the presence of this mass of island cells affords a very plausible and probable cause of the clinical manifestations of hyperinsulinism.

A number of pathologists who have studied the sections practically agree in this interpretation. We are fortunate in having permission to quote the following opinions:

The opinion of Dr. H. E. Robertson, in which Dr. Russell M. Wilder agrees, is as follows:

Without being able to prove my statements on any conclusive morphologic basis I am willing to hazard the opinion that the tumor in question is a carcinoma, and that it is composed of cells strongly resembling those arising from the islands of Langerhans, and in many instances these cells are arranged in whorls and strands suggestive of the arrangement typical of normal islands. This latter appearance was not seen in any of our sections. I do not think that the tumor is growing anywhere near as rapidly as the tumor in our case, and would not expect that metastases would be present. I do not believe that the tumor arises from the acinar tissue and it does not correspond to any type of tumor from that tissue with which I am acquainted.

The opinion of Prof. R. R. Bensley concerning sections stained with hematoxylin and eosin is as follows:

There is no doubt in my mind whatever about the correctness of the diagnosis of the tissue of this tumor; whether we call it an adenoma or carcinoma is of little moment. The tumor is composed of cells similar to those of the islets of Langerhans, and has a good deal of the tendency to arrange these cells in forms characteristic of the islets in man. The protoplasm of the cells appears to be filled with a fine dustlike granulation which, however, is only feebly stained. The type of the cells is more uniform than in the preparations from Dr. Wilder's case, but the differences are probably to be explained by the much more extensive involvement of the organ in the latter case and the differences in vascularization of the tumor.

Professor Bensley's report of his study of some unstained celloidin sections sent him is as follows:

I have attempted to stain the specific granules in the celloidin sections sent me. The neutral gentian method does not work, but, by means of a modified Mallory technic in which aniline acid fuchsin has been used instead of the regular weak fuchsin solutions, I have had enough success to convince me that the cells are actually crowded, as the hematoxylin and eosin preparations seemed to indicate, with tiny granules similar to those of the islet cells. The granules are less sharply defined and not so discrete as in normal islet tissue freshly preserved by suitable fixing agents, but that is probably due to postmortem change. Indeed, I have obtained similar pictures in autopsy material of human pancreas in the islet cells themselves. There is a striking similarity between the cells of this tumor and those of the Wilder, Robertson, etc., tumor, which I have had the privilege also of examining through the courtesy of

Dr. Robertson. The cells in this case, however, do not show the extensive areas of breakdown that the other tumor (Wilder) does.

SUMMARY

After two and a half years of gradually increasing severity of symptoms, the patient developed a state of almost constant semistupor accompanied by frequent convulsions and marked hypoglycemia until death followed, apparently from exhaustion. At necropsy the only significant pathologic lesion found was a small primary tumor of the pancreas. Its microscopic appearance indicates that it originated from the cells of the islands of Langerhans, and that the tumor is either a carcinoma of a low grade of malignancy or else an adenoma. It is believed that the active secretion of insulin by these tumor cells caused a hyperinsulinism which resulted in hypoglycemia and, finally, in death.

CHRONIC DUODENAL ILEUS

WITH ESPECIAL REFERENCE TO TREATMENT *

C. HARVEY JEWETT, M.D.
CLIFTON SPRINGS, N. Y.

There is comparatively little in the literature in regard to chronic duodenal ileus, and in my experience the condition has been quite rare. The first case in the group discussed in this paper was observed in 1919, and since that time, in 30,000 admissions to the hospital, there have been fifteen cases which definitely fall into this class as we have defined it.

The relationship between acute duodenal ileus with acute dilatation of the stomach produced by compression of the root of the mesentery has been frequently stressed, and it seems reasonable to suppose that chronic ileus may have a similar etiology. In the Harvard museum there is a series of casts of the duodenum from cadavers showing the various types, and many of these show on the anterior surface a groove which corresponds with the line of the superior mesenteric artery. This corresponds to the usual point of obstruction observed, which is just proximal to the duodenojejunal angle rather than directly at the angle and caused by it.

Some authors have doubted that this compression by the root of the mesentery is the cause of ileus and have attributed it to other causes, such as congenital constrictions, adhesions, ulcers in the lower duodenum and pressure from outside the duodenum. Undoubtedly some in the group here discussed were due to adhesions and one was due to pressure from a pancreatic cyst.

Certain factors undoubtedly favor the compression of the duodenum by the mesentery. Persons of the asthenic type with lumbar lordosis bringing the curve of the spine forward are apparently more likely to have mesenteric root pressure than are other types. Anomalous insertions of the mesenteric root and other abnormalities of the peritoneum are said to be etiologic factors, and some authors have called attention to the fact that the mesentery should be long enough to allow the coils of the small bowel to fall into the true pelvis without being long enough to allow them to rest on the floor of the pelvis, thus keeping tension on the mesentery.

A second type of case, the so-called arteriomesocolic type, is described [1] as associated with a very low mobile cecum and is said to be due to the resultant abnormal pull on the mesentery; the condition is surgically relieved by resection of the right half of the colon. As far as I could tell none of my cases fell into this group.

The symptoms of this condition are extremely variable and indefinite, and are often prolonged over a long period of years. Wilkie [2] calls attention to the fact that they are often present in childhood, disappear in adolescent life and then reappear later on. He also states that most of his patients were females of the asthenic type. There may be a prolonged history of indefinite gastro-intestinal symptoms, such as gas, fulness after meals, loss of weight and strength, nausea and vomiting in attacks, the vomitus often containing bile, and sometimes rather acute pain. It is doubtful

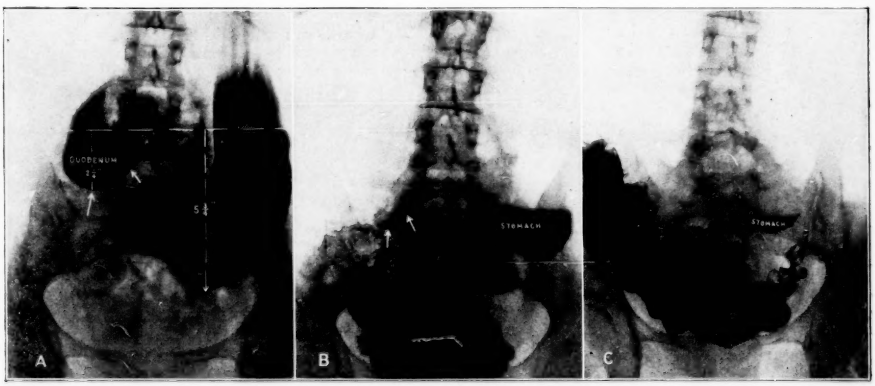


Fig. 1 (case 1).—Before treatment: *A*, low position of stomach and dilatation of duodenum; *B*, two hour examination; arrows indicate low loop of duodenum; *C*, six hour residue.

* From the Clifton Springs Sanitarium and Clinic.

1. Halpert, B.: Arteriomesenteric Occlusion of Duodenum, Bull. Johns Hopkins Hosp. **38**: 409 (June) 1926.
2. Wilkie, O. P. D.: Chronic Duodenal Ileus, Am. J. M. Sc. **173**: 643 (May) 1927.

whether any of the symptoms of duodenal ileus could be due to the absorption of toxic fluid from the duodenum, because it has been shown by Braeye[3] in experimental work on dogs that ten hours is the minimum requirement of time necessary to produce any toxic fluid in isolated loops of duodenum. Hartsock[4] has recently emphasized the association of migraine with duodenal ileus, and this relationship has also been noted by some of the French writers on this subject.

operation with duodenojejunostomy that the patient was cured.

In making the diagnosis in this clinic we have rather insisted that certain points should be present on the roentgen-ray examination, as pointed out by Lichty.[5] Dilatation of the duodenum with writhing and frequent waves of reverse peristalsis, puddling in the lower loop, tenderness over this area and six hour gastric stasis have seemed to us necessary to establish the diagnosis.

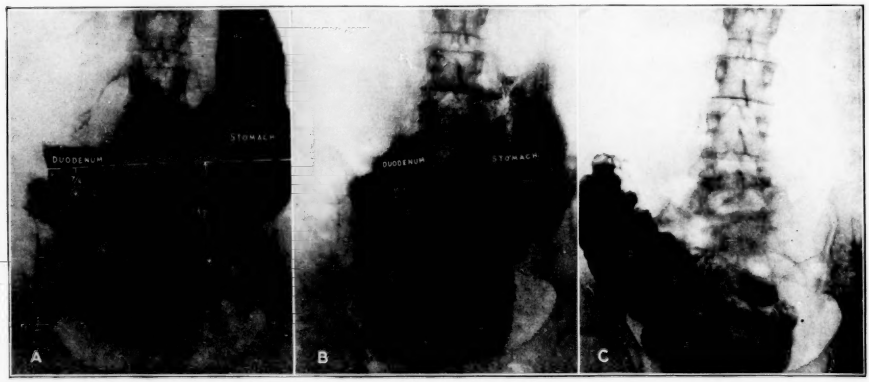


Fig. 2 (case 1).—After treatment: *A*, higher position of stomach; *B*, two hour film showing no special change; *C*, absence of six hour gastric residue.

These is no definite characteristic group of symptoms and the diagnosis is usually made first by means of the roentgen-ray examination. The condition is undoubtedly easily overlooked at operation because in the horizontal position with the duodenum empty no abnormality is visible. A case of this type came to my attention several years ago in which the clinician made the diagnosis by roentgen-ray examination. At

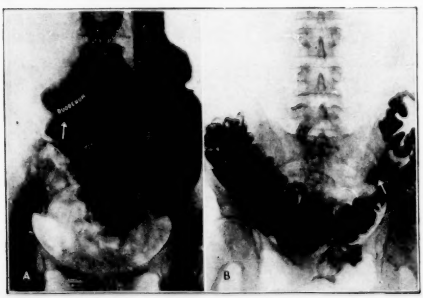


Fig. 3 (case 2).—*A*, typical appearance of duodenum; *B*, small six hour gastric residue.

operation the surgeon could not verify the condition and removed the appendix. The patient, however, did not improve and subsequent roentgen-ray examination revealed the same condition. It was only after a second

There has been nothing definitely characteristic about the gastric analysis in this group of cases, although they may show a continuous hypersecretion with the presence of considerable bile in all the fractions.

It seems advisable to try out medical treatment first in most cases and if this is unsuccessful to resort to surgery later. I have adopted a regimen which has given good results in a number of instances and is based primarily on gain in weight as being the most essential feature. The patient is kept in bed with the foot of the bed elevated and is encouraged to lie on his stomach and right side part of the time and to assume the knee chest position for ten minutes four or five times a day. One patient in this group found that this had for years given her relief in acute attacks, and Wilkie also calls attention to this fact. The patients have been kept on a bland concentrated diet with considerable cream and butter and of sufficient caloric value to result in gain in weight. Gastric lavage toward the end of the day has been used in the early part of the treatment of some cases. Abdominal massage and hot packs are of some help, and drugs are used symptomatically only. The patients are not acutely ill and may resent being kept in bed, so a well ordered regimen of nursing is helpful and occupational therapy is often of value.

The patients are not allowed to get up until there is a substantial gain in weight, and for a week or two before getting out of bed are started on systematic muscular exercise with special attention to the abdominal muscles. The getting up process must be done gradually and is usually begun by a five minute walk

3. Braeye, L.: On the Formation of Toxic Fluid Found in Isolated Duodenejejunal Loops, Bull. Johns Hopkins Hosp. **39:** 121 (Sept.) 1926.
4. Hartsock, C. L.: Migraine, J. A. M. A. **89:** 1489 (Oct. 29) 1927.
5. Lichty, J. A.: Symptomatology and Diagnosis of Chronic Duodenal Ileus, Clifton M. Bull. **10:** 48, 1924.

the first day, the time being gradually increased. The patient then goes back to bed and is not allowed to sit in a chair for long periods of time. Even after full activity is attained, the patient is advised to lie down after meals with a pillow beneath the hips and to assume the knee chest position several times a day. A well fitting support or corset is an important factor in the treatment and should give good support to the lower part of the abdomen. It is interesting to see the change in the position of the abdominal viscera in these patients before and after treatment.

If the patients do not respond well or the obstruction seems too definite in the first place it may be necessary to resort to surgical treatment. The obstructions are usually divided into two classes by writers on the subject. The first class is the arteriomesenteric occlusion type, which is best treated by duodenojejunostomy, and the second is the arteriomesocolic type, which is said to be best treated by resection of the proximal portion of the colon. Wilkie, in discussing the surgical treatment, gives his results following duodenojejunostomy and reports in a series of fifty-five patients, twenty-three being cured, eleven much improved, twelve improved and nine no better. He calls attention to the fact that dilatation of the duodenum may apparently be present at operation without any detectable mechanical evidence of obstruction.

I will present some of my cases in detail in order to bring out points in regard to symptomatology, treatment and its results. Obviously this is not a clean-cut group because the etiology is necessarily somewhat obscure, but further study will undoubtedly throw more light on the condition and result in the discovery of more cases.

REPORT OF CASES

CASE 1.—A single woman, aged 35, who entered the clinic in October, 1927, complained chiefly of fatigue but gave an indefinite history of gastro-intestinal disturbance, dating back for several years, characterized by anorexia, fulness after meals, slight constipation and a great deal of gas. She had had three attacks of acute abdominal pain, the nature of which was obscure and no definite diagnosis had ever been made, although one attack was thought to be appendicitis. She had lost 30 pounds (13.6 Kg.) in the last few years and on physical examination appeared undernourished, of the asthenic type and slightly pale; there was some abdominal tenderness and the scar of a former operation for cervical adenitis was noted. Gastro-intestinal studies showed a marked hyperchlorhydria with considerable bile in all the fractions. Roentgen-ray examination, as indicated in figure 1 showed a tremendous dilatation of the duodenum with frequent waves of reverse peristalsis, marked writhing and a high superior angle in relation to the greater curvature of the stomach. There was some localized tenderness over the lower loop of the duodenum. The position of the stomach as indicated on the films showed the greater curvature 5¾ inches below the crest of the ilium, and the lower loop of the duodenum 2¼ inches below. These measurements are of interest in relation to those taken after treatment.

The patient was put on the general type of treatment previously outlined; she gained rapidly in weight and soon became free from gastro-intestinal symptoms. In two and one-half weeks she had gained 9 pounds (4 Kg.). After three weeks she was allowed to get up gradually; the gain in weight continued, and the symptoms disappeared. Figure 2 shows the change in position after treatment with the greater curvature of the stomach 2¼ inches higher and the lower loop of the duodenum 1⅜ inches higher. She was fitted with a proper abdominal support, which probably further raised the position of the stomach. After returning home she reported still further gain in weight.

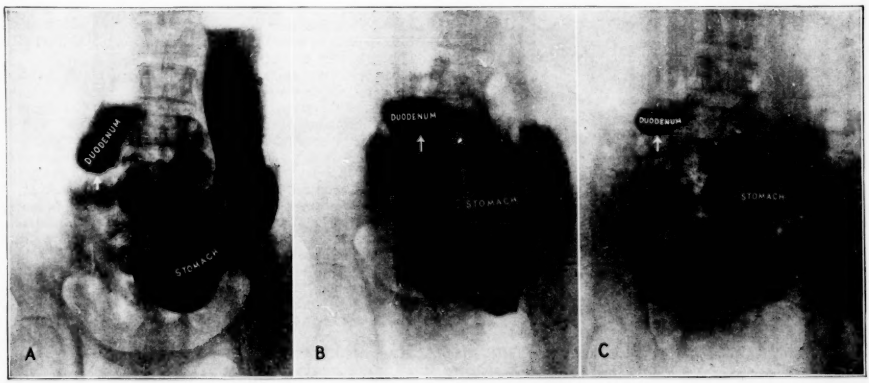


Fig. 4 (case 3).—*A*, dilated duodenum; note the high position in relation to the greater curvature of the stomach; *B*, two hour film, showing very slow emptying of the stomach; *C*, large six hour gastric residue and puddling in the duodenum.

CASE 2.—A married woman, aged 44, entered the clinic in October, 1927, complaining chiefly of weakness and nervousness. From the standpoint of the history and symptoms the case is not very clean cut, but it is reported here because of the roentgen-ray observations and the improvement after treatment. The gastro-intestinal symptoms consisted of gas, burning, fulness in the upper part of the abdomen and constipation, which had been present for several months. She had lost considerable weight and had an active thyroid adenoma with a basal metabolic reading of plus 35. There had been some indefinite gastro-intestinal disturbance for a long time, but there was no history of any acute attacks. The gastric analysis in this case showed a slight hyperchlorhydria of the continuous secretion type with a large amount of bile in all the fractions. The roentgen-ray examination, as shown in figure 3, showed marked dilatation of the duodenum with reverse peristalsis, writhing, some tenderness and six hour gastric stasis. The superior angle of the duodenum was also high in relation to the greater curvature of the stomach, as in case 1. The patient was put on the same type of treatment and gained 18 pounds (8.2 Kg.) in six weeks. Following this the thyroid adenoma was removed; the patient made a good recovery and

has been free from gastro-intestinal symptoms. Later gastro-intestinal roentgen-ray examination showed the position of the stomach to be 2½ inches higher than at the time of the first examination, and the emptying time was normal.

Case 3.—This is particularly interesting from the standpoint of the history, and is perhaps as typical as any case in the group. A married woman, aged 57, entered the clinic in October, 1926, because of stomach trouble that started when

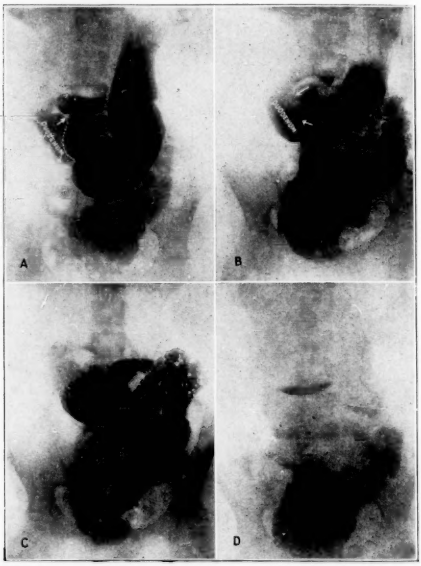


Fig. 5 (case 4).—Before operation: *A*, irregular appearance of duodenum; *B*, two hour film; *C*, large six hour residue, with duodenum still filled; *D*, twenty-four gastric residue; arrow points toward lower loop of duodenum still containing barium.

she was a young girl and was characterized at first by frequent attacks of indigestion with fulness and gas and later on by severe nausea and vomiting. There had not been any acute pain, but there was an almost constant feeling of discomfort, distress and fulness after meals. The condition had been much worse in the past ten years, during which time she had been treated for gastric ulcer without relief. The acute attacks became more severe and frequent and were characterized by nausea and the vomiting of food, often that which she had eaten the day before. She had to go to bed for several days because of the attacks and obtained some relief from gastric lavage, but she found her greatest relief from assuming the knee chest position. This she had done of her own accord without the advice of any physician. She had lost 25 pounds (11.3 Kg.) during the past ten years and had developed asthma.

The patient was of the asthenic type, much underweight, with dry, wrinkled skin, ptosis of the abdomen and a great deal of gas distention. There was some general abdominal tenderness. Curiously enough, in this case the fractional gastric analysis was normal, showing very little bile and no mucus. The roentgen-ray examination (figure 4) showed the same appearance of the duodenum as that described in cases 1 and 2. In this case the typical appearance was even more marked, with a large residue in the stomach at six hours and a large duodenal puddle at this time. The superior angle of the duodenum was again decidedly high in relation to the greater curvature of the stomach, which was situated near the symphysis.

The patient was given the usual type of treatment and it was necessary to use gastric lavage quite continuously at first. In four weeks she gained 8½ pounds (3.8 Kg.) and the symptoms largely cleared up; incidentally, the asthma was greatly relieved. After this she returned to her home and under a modified form of treatment continued to gain weight. One year later she reported a gain in all of 44 pounds (20 Kg.) with a return to active, normal health and complete relief from the gastro-intestinal symptoms and the asthma. Unfortunately I have not had an opportunity of checking up on the roentgen-ray examination of this case, which would obviously be very interesting.

Case 4.—A single woman, aged 43, presenting symptoms of particular interest from the surgical standpoint, entered the clinic in April, 1924, with a history of never having been well or strong since an attack of measles at the age of 3 years and of having been subject to "bilious attacks" as long as she could remember. As a child she had had a great deal of stomach trouble and at the age of 18 was operated on for an attack of acute appendicitis. She made a good recovery and was a little better for a time, but the attacks of nausea and vomiting recurred as before and any unusual strain would quickly precipitate an attack. In the early thirties she was operated on for hemorrhoids and dilatation of the cervix, and at the age of 39 the gallbladder was drained without in any way improving her condition. Her attacks gradually became more frequent, more severe and associated with a great deal of pain. They would start with the vomiting of large quantities of food and later of bile, and finally pain would develop which became so severe that morphine was required for relief, and she became a mild addict.

The patient was slightly undernourished and highly nervous, with a strong odor of acetone on the breath. Scars of the former operations were noted, and there was considerable gaseous distention of the abdomen, but no rigidity, in spite of the fact that at the time of admission she was having a rather acute attack. An Ewald test meal showed a free acid of 40 and a total of 54. On roentgen-ray examination the stomach showed rather curious peristaltic action, occurring in violent spasms and then completely relaxing. The duodenum was very much dilated and showed the usual writhing and marked reverse peristaltic action. There was marked tenderness over the duodenum. Figure 5 shows the condition quite clearly. The stomach was not particularly low nor was the superior angle of the duodenum high, but the emptying time was delayed, with a small twenty-four hour gastric stasis and a large amount of puddling in the duodenum on all of the examinations, except the twenty-four hour examination. The duodenum appeared somewhat more irregular than in any of the preceding cases, and one readily got the impression that the condition might be complicated by adhesions.

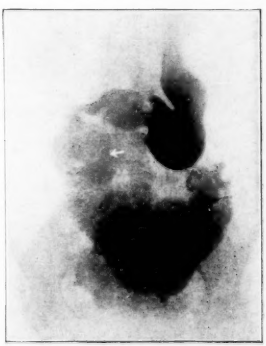


Fig. 6 (case 4).—After operation: Stomach emptying rapidly; duodenum still dilated; arrow points to duodenojejunostomy stoma.

On account of the marked obstruction and the fact that medical treatment was unsuccessful, surgery was quickly decided on. At the time of operation the surgeon noted that the stomach was adherent to the parietal peritoneum, liver and gallbladder. It had sagged somewhat from its normal position. The transverse colon was also prolapsed and there was a general splanchnoptosis. The duodenum was also found adherent in this mass of adhesions, involving the right upper

quadrant. After these were freed the transverse colon was turned upward and the markedly dilated duodenum was readily brought through the posterior reflection of the mesocolon. The ligament of Treitz was apparently quite normally situated; it did not appear to play any part in the duodenal obstruction and was incised in order to mobilize the jejunum. A duodenojejunostomy was performed after the manner of Kellogg. Following operation the patient did extremely well and films taken eight months later (figure 6) showed a very interesting condition. At this time peristalsis was normal. The emptying time of the stomach was slightly rapid, the stomach being entirely empty in two hours. The duodenum was still dilated but did not show reverse peristalsis, writhing or puddling. The point of duodenojejunostomy could easily be made out, and incidentally the position of the stomach was about 2 inches higher than on the first examination. The patient had been ill so long that she had developed many neurotic symptoms, but in spite of this she has done extremely well and remains in good health.

CASE 5.—This will not be reported in detail, but is cited merely to illustrate obstruction of the duodenum by means of pressure from an intra-abdominal mass. On roentgen-ray examination (fig. 7) a large filling defect and pressure deformity from extragastric pressure was noted on the greater curvature of the stomach. This was thought to be due to either a tumor or a cyst of the pancreas, and at operation was found to be the latter. The film is not altogether clear but shows a greatly dilated duodenum. The patient had a large six hour gastric residue.

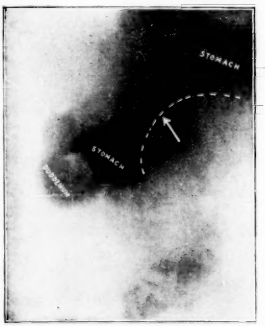


Fig. 7 (case 5).—Pressure defect from pancreatic cyst and obstruction of duodenum.

CASE 6.—A married woman, aged 50, gave a history of migraine headaches for thirteen years, coming on at irregular intervals and relieved by attacks of vomiting, which occurred about every ten days. She had lost a good deal of weight and complained of a marked feeling of fulness in the abdomen after meals and of a great deal of gas. She had had severe jaundice twenty years previous to admission. She was of the asthenic type, and emaciated. Physical examination showed marked visceroptosis, visible peristaltic unrest, fibroid of the uterus and polypus of the cervix. There was also a right inguinal hernia. The roentgen-ray examination (fig. 8) showed a moderately dilated duodenum, frequent waves of reverse peristalsis and some writhing, and the roentgenograms of the gallbladder showed evidence of gallstones. There was a right inguinal hernia containing coils of ileum and a marked ptosis of the transverse colon. The stomach showed a six hour residue.

The patient was operated on for the hernia and fibroid of the uterus, but the upper abdominal condition was not treated at this time. Following operation the usual treatment for duodenal ileus was instituted. The patient gained 31 pounds (14 Kg.), the gastro-intestinal symptoms largely cleared up, and she has remained well for more than two years.

CASE 7.—A single woman, aged 29, the first patient observed in this series, gave a long and involved history of what she called bilious attacks that had started in early childhood with frequent vomiting. She had been treated over a long period with frequent rest cures, both in this country and abroad, but without benefit. Six years before admission the appendix had been removed and she was a little better for a few months, but the attacks recurred. At the time of admission to the clinic in March, 1919, she had much epigastric soreness and a feeling of tightness with what she called spasms of the stomach and recurring severe vomiting attacks. There was an alternate constipation and diarrhea, and the patient had become a morphine addict. She was highly neurotic and hysterical at times, and had been treated as having a psychosis.

The patient was undernourished, of the asthenic habitus, and appeared rather anemic. She had a rapid pulse with occasional extrasystoles and the scar of an old operation for colloid goiter. The abdomen was held rigid and there was deep tenderness in the epigastrium and right iliac fossa. The skin of the abdomen was extensively pigmented from the use of hot fomentations. She seemed highly introspective and had been studied in a number of clinics with the diagnosis of duodenal obstruction repeatedly verified.

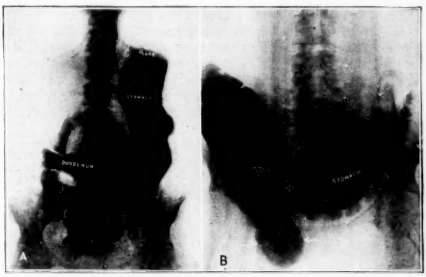


Fig. 8 (case 6).—*A*, large, unusual transverse loop of duodenum, which is dilated; *B*, six hour residue; arrows point to coils of ileum in hernial sac.

On roentgen-ray examination the patient showed the usual manifestations, with tremendous dilatation of the duodenum and all the other signs present. Figure 9 shows the condition quite distinctly. Medical treatment in this case was unsatisfactory, and operation was advised but refused.

CONCLUSION

The patients in this group were mostly women in middle age of the asthenic habitus who gave a history of long and indefinite gastro-intestinal disturbance. Loss of weight often accompanied the occurrence of more severe symptoms and a history of recurring so-called bilious attacks was rather frequent, but there was no definite symptom complex by which the condition could be recognized. The diagnosis was made in each instance by roentgen-ray examination. Medical treatment has given good results except in cases of marked obstruction in which surgery seemed indicated from the outset. More frequent roentgen-ray study of the patient with chronic gastro-intestinal disturbance will undoubtedly reveal a higher percentage of cases of this type.

Fig. 9 (case 7).—Characteristic dilatation of duodenum.

Clinical Notes, Suggestions and New Instruments

TWO CASES OF SPOROTRICHOSIS INFECTION DUE TO BARBERRY

JACKSON BLAIR, M.D., AND NORMAN C. YARIAN, M.D.
CLEVELAND

Sporotrichosis is a chronic infectious granulomatous disease, characterized by cutaneous and internal lesions due to the growth of parasitic fungi of the sporotrichosis group. The first accurate description of the condition and identification of the infecting fungus was made by Schenk of Johns Hopkins Hospital in 1896. Since that time 165 cases have been reported in America, eighteen of which were reported by Foerster,[1] to

Sporotrichosis infection from cut inflicted on thumb while packing Berberis thunbergii. Note the distribution of the lesions along the lymphatics and their nodular character. (Courtesy of Dr. C. L. Cummer.)

whose article the reader is referred for a more extensive history and description of the disease. Fourteen of Foerster's cases occurred in employees of a tree nursery and at least ten were undoubtedly acquired by inoculation with the thorns of the barberry shrub. The average duration of the disease before recognition among fifty-one cases previously described was four months, and the average period of treatment before recovery was sufficient to permit the patient to return to work was twenty-six days, which indicates an average period of five months of disability in these cases and shows the incapacitating effect of the infection.

The two cases reported here were both undoubtedly due to infection from the barberry shrub *Berberis thunbergii*, and were received while the patients were employed by a retail nursery establishment.

CASE 1.—E. W., aged 19, was packing *Berberis thunbergii* for shipment when he ran a thorn of the plant into his left index finger. This caused little discomfort and he did not report to us until a week later, when his finger became sore and inflamed. This appeared to be an ordinary infection and incision was made under local anesthesia, but no pus was obtained. A few days later a few small, hard nodules appeared on the dorsum of the hand and wrist. New lesions began to appear higher up on the forearm and, later, on the arm to the shoulder. Soon the nodules began to soften; one or two were incised and a thick viscid reddish brown discharge was obtained. The unusual nature of the infection had been noted earlier and smears of the discharge were taken and stained with Loeffler's methylthionine chloride, but no organisms could be found; blood cultures were also negative. The nodules continued to appear and break down and were opened and drained but without appreciable benefit. When the correct diagnosis had been made the patient was put on full doses of sodium iodide by mouth and the lesions quickly responded, the entire period of treatment being five days more than two months.

CASE 2.—R. S., aged 19, was "mossing" *Berberis thunbergii* for shipment when he cut the right thumb with his knife. A few days later the thumb became sore but he did not report until three weeks later, when the site of the cut showed the chancre-like lesions that sometimes appear with this infection. This was opened but no pus was obtained, and in a few days he appeared with a high fever, inflammation of the lymphatics of the arm and the general appearance of infection with lymphangitis. This was treated in the usual manner with magnesium sulphate compresses and the acute symptoms subsided, but small hard lesions began to appear on the dorsum of the hand and along the course of the inflamed lymphatics. As this case had followed case 1 by only a few days, we realized that it was of the same type and sporotorichosis was suspected. On looking up the literature we found Foerster's article, which had appeared a short time previously and which made it more evident that we were dealing with similar cases. The patient was then sent to the laboratory of Dr. Clyde L. Cummer, and *Sporotrichum* was grown on Sabouraud's medium. There was rapid involution of the lesions when the patient was placed on full doses of potassium iodide by mouth. The entire course of this infection occupied approximately three months. The lesions in this patient were not incised, except one for the purpose of taking a culture, and were no worse and no better than those in case 1 which were incised. Patient 1 was treated with sodium iodide and patient 2 with potassium iodide with equal, remarkable and immediate benefit.

The accompanying photograph gives a good idea of the peculiar nodular character and distribution of the lesions.

7405 Detroit Avenue.

1. Foerster, H. R.: Sporotrichosis, An Occupational Dermatosis, J. A. M. A. **87**: 1605 (Nov. 13) 1926.

A COAPTATION SPLINT FOR IMMOBILIZATION OF THE THUMB IN ABDUCTION

CHARLES W. LESTER, M.D., NEW YORK

Immobilization of the thumb is frequently necessary in the treatment of sprains of its joints or fractures of its phalanges or metacarpals. A certain amount of abduction is often advisable, particularly in those rather common fractures of the metacarpal due to boxing. The ordinary splint made of a single tongue depressor or similar material, applied to the dorsal or palmar aspect of the thumb, does not fit well, is uncomfortable, is difficult to maintain in position, and provides only a relative degree of immobilization. A plaster cast provides all the requirements of the treatment but takes time to put on, cannot be removed and reapplied at subsequent dressings, and is bulky and uncomfortable for the patient. In some cases it will always

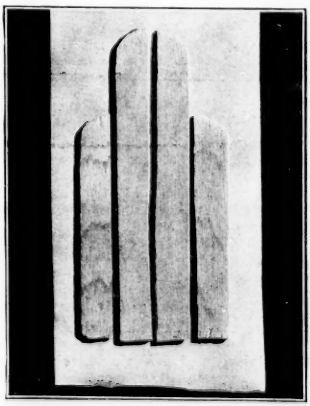


Fig. 1.—Split tongue depressors applied to gummed surface of adhesive plaster.

be needed, but the great majority of cases can be treated with satisfaction to both surgeon and patient by the coaptation splint here described. It is easy to make and the materials for its construction are always at hand.

The materials necessary are a strip of adhesive plaster 2½ or 3 inches wide by 10 or 12 inches long, and two wooden tongue depressors. The distance should be measured from the middle of the thumb nail to the anatomic snuff-box and one

V 91
1928

tongue depressor should be cut to that length. The other should be made about two thirds as long and each should be split longitudinally into two equal parts. The longer pair is placed on the adhesive surface of the plaster, one strip on each side of the midline of the plaster with the long axis of wood and plaster corresponding and with the cut ends of the wood about an inch from the end of the adhesive tape. The strips of the shorter pair are placed one on each side of the longer in the same fashion with their cut ends in a line. There should be about one-eighth inch of separation between the pieces of wood (fig. 1). The remainder of the length of the plaster is folded back at the curved ends of the longer splints so that the adhesive surfaces of the plaster will be in contact and the wood covered on both sides, with the fabric surface of the plaster exposed. The excess plaster should be trimmed off so as to leave a cuff of plaster for about an inch beyond the cut ends of the tongue depressors. The excess plaster of the other end may be cut off obliquely on lines joining the ends of the shorter and longer bits of wood on each side (fig. 2).

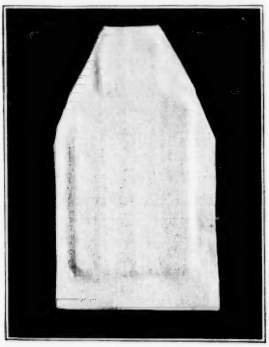


Fig. 2.—Completed splint.

The coaptation splint is applied to the dorsum of the thumb with the cuff at the wrist and the ends of the longer pieces of wood over the thumb nail. It is held in place by three narrow strips of adhesive. The first passes around the wrist over the cuff of the splint and slightly overlapping the ends of the wood.

Fig. 3.—Splint applied to hand.

The second is important in maintaining abduction. Starting at the ulnar side of the wrist it passes obliquely across the anterior surface of the wrist and thenar eminence to the dorsal surface of the base of the thumb; then around the thumb at this point from within outward and back across the dorsum of the wrist to the place of beginning, crossing itself over to the back of the first metacarpal. If abduction is desired, the thumb should be held firmly in this position during the application of this strip. The third strip encircles the distal end of the thumb and splint. It also aids in abduction by keeping the distal phalanx of the thumb snugly against the splint (fig. 3). A figure of 8 bandage is then applied around wrist and thumb.

51 East Fiftieth Street.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, SECRETARY.

COMBINATIONS OF COD LIVER OIL AND PHOSPHORUS NOT ACCEPTABLE FOR N. N. R.

The use of elementary phosphorus in the treatment of rickets is based on the observations of Wegner (*Arch. f. path. Anat.* **61**:44, 1874), in 1874, that the administration of white phosphorus in minute amounts caused the formation of a dense band at the epiphyses of the long bones. He suggested the use of phosphorus in rickets. Kassowitz, ten years later (*Ztschr. f. klin. Med.* **7**:36, 1884), reported on the therapeutic use of phosphorus in rickets. At first he used phosphorus dissolved in olive or almond oil, and later in cod liver oil. He reported favorable results. During the succeeding twenty years, many papers were published on the subject, opinions being about equally divided as to the value of phosphorus. It is also pointed out that death occurred in several instances from excessive doses of phosphorus. Practically all those claiming good results from phosphorus used it in combination with cod liver oil (now known to be specific in rickets). Phemister (*J. A. M. A.* **70**:1737 [June 8] 1918) and Phemister, Miller and Bonar (*J. A. M. A.* **76**:850 [March 26] 1921) showed roentgenologically that the administration of phosphorus leads to the formation of a dense band of calcification at the ends of the long bones, and reported two cases of rickets in which this effect was observed when phosphorus was administered without cod liver oil. In both instances, however, treatment was begun in the early summer at a time when rickets ordinarily improves spontaneously. Recently Hess and Weinstock (*Am. J. Dis. Child* **32**:483 [Oct.] 1926) confirmed the observation that the administration of elementary phosphorus leads to the formation of a dense area of calcification at the epiphyses of the long bones. They considered this a pathologic picture rather than evidence of healing rickets and they showed, in an extensive experimental study, that the administration of phosphorus in either small or large doses did not prevent the occurrence of rickets to any degree whatever. They found, further, that the administration of phosphorus actually led to a diminiution of inorganic phosphorus in the blood, thus favoring rather than preventing the occurrence of rickets.

Since the demonstration of the specific effect of cod liver oil and irradiation in the treatment of rickets, phosphorus has practically fallen into disuse among pediatricians. The accumulated evidence is unconvincing as to the value of phosphorus; furthermore, it is known that phosphorus is a dangerous drug. Certainly the routine administration of phosphorus in combination with cod liver oil is to be discouraged.

In reply to inquiries, two consultants of the Council who have worked especially on rickets expressed the opinion that phosphorus was useless in the treatment of rickets and had best not be combined with cod liver oil. A third consultant believes that phosphorus may have a value in some metabolic disorders of the skeleton, but considers it inadvisable to combine phosphorus with cod liver oil.

In view of the new evidence and the opinions based thereon, the Council decided that preparations of cod liver containing phosphorus are unacceptable for New and Nonofficial Remedies as being unscientific and inimical to the best interests of the public and of the medical profession. The Council holds that if phosphorus has a therapeutic value it can be administered separately, and that such a dangerous drug should not be given indiscriminately in mixtures. The Council therefore decided to omit from New and Nonofficial Remedies all preparations containing phosphorus in combination with cod liver oil.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Five dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JULY 14, 1928

THE CARDIOTACHOMETER

The picture of a physician, with watch in hand, counting the pulse rate of his patient has long been used to represent one of the main diagnostic activities of the medical practitioner. Yet the determination of the rate of the heart beat by this procedure belongs to the comparatively modern devices of practice. The pulse, it is true, has long enlisted the interest of scientific observers. Galen, for example, is known to have written numerous essays on the pulse. The feeling of the pulse has a long history in both literature and art.[1] It has been pointed out,[2] however, that up to 100 years ago the practicing physician paid little attention to pulse rate but indulged in hair-splitting refinements of classification of pulses of different qualities. Innumerable voluminous but sterile treatises have been published on the quality of the pulse. Quantitative studies of the pulse rate were initiated by Galileo (1620), who synchronized the beat of a pendulum with the pulse and expressed the pulse rate by the length of the pendulum. A hundred years later, Sir John Floyer published a book, called the "Physician's Pulse Watch," in which for the first time careful pulse numerations are recorded. For this purpose he employed a watch that ran sixty seconds.

It was not, however, until the second quarter of the nineteenth century that counting the pulse was accepted as a routine procedure of importance. Instruments and apparatus for producing objective records of the pulse have not been lacking. One need merely recall in this connection the familiar sphygmograph, the polygraph and the electrocardiograph. These devices require the person under examination to remain quiet and cannot be applied during vigorous bodily activity or in certain unusual situations. A more mobile recording arrangement has long been a desideratum; and it seems to have been successfully perfected by Boas[2] of the Montefiore Hospital, New York. He has described an instrument, the "cardiotachometer," which is actuated by the action current of the heart and records automatically the totality of heart beats over long periods of time, even in the moving person. With the small chest electrodes fixed over the precordium, free motion of the body and extremities does not cause interference with the regular signaling of the action current of the heart. The subjects can indulge in calisthenic exercises, walk, run, sit down on the floor or lie down and roll from side to side without disturbing the regular registration of the counter, as shown by the graphic record. Coughing and laughing do not introduce inaccuracies.

In presenting the possibilities of his ingenious instrument, which gives continuous graphic records at long distance like the ticker tape of the stock broker's office, Boas remarks that many physiologic problems, such as the response of the heart to exercise, drugs and other stimuli, can be studied. The response of the heart during exercise can be accurately measured. As an accessory in many physiologic and clinical examinations, such as basal metabolic rate and minute volume flow determinations, Boas regards the apparatus as invaluable. He states that the cardiotachometer will give for the first time an actual count of the total number of heart beats under the conditions and activities of everyday life; and the device will be of particular value in determining the clinical significance of the simple tachycardias. Boas adds that it is often difficult to ascertain whether a tachycardia is persistent or only transient and due to an anxiety neurosis or to the excitement of the examination. The cardiotachometer, particularly if it is run while the patient is asleep, will readily distinguish the persistent rapid heart rate that occurs in cases of myocarditis or exophthalmic goiter from a functional acceleration.

1. References to the items here mentioned will be found in Garrison, F. H.: History of Medicine, Philadelphia, W. B. Saunders Company.
2. Boas, E. P.: The Cardiotachometer, Arch. Int. Med. **41**: 403 (March) 1928.

INDICANEMIA

Although it is admitted that uremia is associated with a retention of certain substances within the organism, owing to a failure of adequate renal function, there has not as yet been general agreement with regard to a specific compound or even a group of substances that can be held responsible. In uremia the content of nonprotein nitrogen in the blood is usually found to be unduly high. This implies that urea and other nitrogenous catabolites fail to be eliminated with the usual readiness. From this it is tempting to conclude that one or more of the retained substances becomes responsible for the pathologic characteristics of the uremic condition. The attempts to fix such culpability on urea, quantitatively the most conspicuous of the circulating "metabolic waste" representatives, have not been successful. There are records, furthermore, of extremely high concentrations of catabolites occurring in the blood without the

V 9
192

slightest indication of the classic symptoms of uremia. The expected specific uremic "poison" has never been discovered, despite the hopes raised by various reports that a characteristic "toxin" would be found. In this connection it should not be overlooked that disturbances in acid-base equilibrium due to the inadequacy of acid elimination, or abnormal osmotic phenomena associated with the retention of electrolytes in general, may play an etiologic part. Indeed, some writers have boldly asserted that there is a uremic condition dependent solely on an edema of the brain due to retention of salts and water. This is conceived as something distinct from a uremia due to nitrogenous retention. Wells,[1] who has properly sensed the inevitable interlinking of many dependent factors when a single function is disturbed, remarks that all possible shades of cooperating influences may be expected to occur when the kidneys fail, and explain the confused, variable, changing picture of the uremic state.

In view of the uncertainties of etiology thus presented, it is not surprising that so many attempts have been made to find a new possible materies morbi. Hints of its existence have repeatedly been received. A few years ago Andrewes[2] noted a peculiar color reaction in uremic serums when performing van den Bergh's diazoreaction. Hewitt[3] simplified the test, and as a result of his investigations suggested tentatively that a cyclic amine, such as histamine or tyramine, might be responsible. The van den Bergh test is commonly used to detect bilirubinemia, but this factor has been excluded in the modifications applied by Andrewes and his followers. Hewitt's assumptions were of especial interest because the amines that he suspected occur in the intestine; and as their elimination from the body after absorption depends on the kidney, nephritis would be expected to interfere seriously with their excretion. Furthermore, in adequate dosage they might account for some, at least, of the symptoms of uremia.

The conclusions incriminating these amines are no longer tenable in the light of recent studies by Harrison and Bromfield[4] at St. Bartholomew's Hospital and College, London. These authors have made it appear probable that the substance in uremic serums responsible for the reaction noted by Andrewes is an indoxyl compound, presumably potassium indoxyl sulphate (indican), or possibly in part indoxyl glycuronate. The modified diazoreaction thus becomes a test for indicanemia. The possible import of this has been appreciated by Baar[5] in his monograph on indicanemia. He holds that indican retention is the most accurate of evidences of renal impairment, for no matter how much indican is absorbed from the intestine the blood content remains constant if the kidneys are functioning normally, whereas even without intestinal putrefaction there is a marked indicanemia if the kidneys are injured, sometimes even when there is little change in the nonprotein nitrogen of the blood. The new color reaction is readily applied to serum and may prove to be of diagnostic significance along with other evidences of kidney retention now employed.

1. Wells, H. G.: Chemical Pathology, ed. 5, Philadelphia, W. B. Saunders Company.
2. Andrewes, C. H.: Lancet **1**: 590 (March 22) 1924.
3. Hewitt: Biochem. J. **19**: 171, 1925.
4. Harrison, G. A., and Bromfield, R. J.: The Cause of Andrewes' Diazo-Test for Renal Inefficiency, Biochem. J. **22**: 43, 1928.
5. Baar: Die Indicanaemia, Berlin, 1922, quoted from Wells.

CHANGES IN HEATED MILKS

Since cow's milk may become the almost exclusive food of the infant during long periods of growth, all the nutrient virtues of the product should be preserved as much as possible before it is fed. Market milk may be manipulated in various ways in the course of its commercial production and distribution. Some form of heating is widely employed for germicidal and conservation purposes. It is now well recognized that this may produce some deterioration, which needs only to be recognized in order that compensatory provisions may be made. The lability of the antiscorbutic vitamin under certain conditions of sustained heating in the presence of oxygen and at a suitable reaction is now generally appreciated; hence supplementary antiscorbutic foods are regularly supplied to the infant fed on cow's milk. The advantages of pasteurization or sterilization of milk can thus be retained without physiologic detriment. In many places milk is thoroughly boiled before it is fed to infants. The digestibility of the product and its corresponding tolerance by the youthful organism is reputed by some investigators to be distinctly enhanced by the heating process. Boiled milks have enjoyed a great vogue in France.

In the process of pasteurization the calcium salts of milk, it has been asserted, are rendered more or less insoluble, depending on the length of time the milk is heated. The insoluble products may adhere to the containers and thus become lost to the subsequent user. Daniels and Stearns[1] therefore insist that the method of heating the milk materially influences the availability of the calcium and phosphorus of the feeding mixture. Pasteurization may be the best method of making milk more nearly safe for infant feeding, although this has recently been questioned; but the inquiry is offered whether heat-treated milk is the most satisfactory from the standpoint of fulfilling the physiologic needs of the baby. Daniels and Stearns even regard it as probable that a baby fed pasteurized milk over a long period is receiving too little calcium for growth needs.

A new possibility of deficiency due to vigorous boiling of cow's milk has been brought to notice by Magee and Glennie[2] of the Rowett Research Institute in Aberdeen. In their tests heat caused the disappearance by volatilization of 20 per cent or more, according to

1. Daniels, Amy L., and Stearns, Genevieve: The Effect of Heat Treatment of Milk Feedings on the Mineral Metabolism of Infants, J. Biol. Chem. **61**: 225 (Aug.) 1924.
2. Magee, H. E., and Glennie, Agnes E.: Studies on the Effect of Heat on Milk: IV. The Iodine Content, Biochem. J. **22**: 11, 1928.

the duration of heating, of the total iodine of separated milk. Cow's milk has been reported [3] to contain about 0.010 mg. of iodine per hundred cubic centimeters. This is the dietary supply of the element on which the milk-fed infant depends for its proper thyroid development. Perhaps one of the advantages of the now widely used cod liver oil, in certain districts, lies in its comparatively large content of iodine, which may be present to the extent of 0.001 per cent. Kelly [4] has pointed out that, weight for weight, this is a thousand times more than is usually present in the commoner foodstuffs such as cereals, in which, as a rule, it is present only in traces. Green vegetables occupy an intermediate position between cod liver oil and cereals as regards their iodine content, and Forbes [5] concludes that they are the most important source of iodine in the human dietary. They contain about a hundredth of the amount usually present in cod liver oil, though Fellenberg [6] estimates the iodine content of some green vegetables at more than a thousandth of that amount.

Current Comment

BLOOD GROUPS OF MOTHER AND CHILD IN RELATION TO ECLAMPSIA

The establishment of the blood group of the child before birth, by the development of the iso-agglutinogen if not also of the iso-agglutinin, creates in pregnancy, if the groups of the mother and of the child differ, the situation of closely associated incompatible bloods which conceivably might lead to unfavorable reactions. In animals the intravenous injection of hemagglutinative blood has produced agglutination, thrombosis and focal necrosis of the liver similar to the lesions of eclampsia. The observations by Young [7] that eclamptic conditions are preceded by premature separation of the placenta, or placental infarction, have suggested to some minds that such changes might be part of the disturbance by which maternal and fetal blood are afforded contact. With the incentive of such information and reasoning, many persons have studied the relation of eclampsia to blood groups with especial reference to the so-called heterospecific pregnancies. McQuarrie [8] reported from his study of 180 women and their new-born that in 28.8 per cent the mother and child were in the same group, in 46.6 per cent the blood group of the child seemed unestablished, and in the remaining small group, in which there was definite interagglutination between the blood of the mother and that of the child, occurred 70 per cent of all cases of eclampsia. Eclampsia was therefore 16.5 times more frequent when the maternal and fetal bloods were incompatible. Many other studies, however, have failed to show any coincidence of this sort, and on the whole the explanation of eclampsia directly on this basis does not seem well established.[9] The subject remains of interest, nevertheless, and reports [10] of cases of eclampsia or preeclamptic toxemia in which the mother is in group O and the child in group AB claim particular attention because such a combination of groups is contradictory to a certain understanding of the inheritance of blood groups (theory of three multiple allelomorphs). The detection of such combinations would therefore be of general value even if not of special significance in regard to the toxemias of pregnancy, certain unconsummated pregnancies, or sterility. The fact that other tissue cells besides blood corpuscles contain group specific substances has been shown recently. In this connection, Oettingen and Witebsky [11] have tested group A antiserum for complement fixation with alcoholic extracts of various tissues, liver, kidney and spleen of the child, decidua of the mother (mother and child both in group A), placental cells, and with human blood cells of groups A, B and O. Only with group A cells, with decidua and the child's organs, was complement fixed. The author considers the placenta as a neutral zone and supports the previous belief that the intact placenta forms the defense between the maternal and the fetal systems. Without attempting to discuss the whole question of the permeability of the human placenta for antigens, antibodies and immunity in general, two considerations seem pertinent to the problem of eclampsia in relation to blood groups: What factors might alter the protective rôle of the placenta, and is the late development of iso-agglutinins, about the time of birth or shortly afterward, of any significance?

SELF-DISINFECTING POWER OF THE NASAL MUCOSA

The ubiquity of bacteria is a matter of common knowledge. The micro-organisms are so widely distributed in our environment that the opportunity for contamination is manifold. As a consequence, a variety of defenses have been developed to protect us against our bacterial enemies. The sound skin is the foremost barrier against invasion; but even if the integument becomes insufficient for protection, various types of cells and circulating chemical substances may be requisitioned. Gay [12] has recently said that any one who has carefully followed the evolution of the science of immunology must feel certain that in many of the protective processes there is concerned some third, as yet not clearly understood, factor in addition to the mobile polymorphonuclear phagocytes of the blood stream and the antibodies. The oral and nasal cavities might seem to furnish more ready opportunity for the ingress of bacteria. Those that enter with the food are likely to find their nemesis in the unfavorable mediums

3. Leitch, Isabella; and Henderson, J. M.: The Estimation of Iodine in Foodstuffs and Body Fluids, Biochem. J. **20**: 1003, 1926.
4. Kelly, F. C.: The Influence of Small Quantities of Potassium Iodide on the Assimilation of Nitrogen, Phosphorus and Calcium in the Growing Pig, Biochem. J. **19**: 559, 1925.
5. Forbes: Ohio Agric. Exper. Sta. Bull., 1916, p. 299.
6. Fellenberg: Biochem. Ztschr. **139**: 371, 1923.
7. Young, J.: Proc. Roy. Soc. Med. **7**: 307, 1914. Young, J., and Miller, D. A.: Ibid. (Sect. Obst. & Gynec.) **14**: 247 (March) 1921; Brit. M. J. **1**: 486 (April 2) 1921.
8. McQuarrie, I.: Bull. Johns Hopkins Hosp. **34**: 51 (Feb.) 1923.
9. Hirszfeld, L.: Konstitutionsserologie und Blutgruppenforschung, 1928, p. 152.
10. Schneider, G. H.: Klin. Wchnschr. **4**: 2383 (Dec. 10) 1925, Klaften, E.: Monatsschr. f. Geburtsh. u. Gynäk. **76**: 91 (April) 1927.
11. Von Oettingen, K., and Witebsky, E.: München. med. Wchnschr. **75**: 385 (March 2) 1928.
12. Gay, F. P., in The Newer Knowledge of Bacteriology and Immunology, edited by E. O. Jordan and I. S. Falk, Chicago, University of Chicago Press, 1928, p. 881.

they encounter in the gastro-intestinal tract. The micro-organisms in the dust that may be carried into the nasal tract during respiration are legion. Winslow and Kligler [13] found, for example, more than 51,000 colon bacilli and 42,500 acid-forming streptococci per gram of dust from city streets. Such considerations lend significance to the observations of the autosterilizing power of the nasal mucous membrane reported by Arnold, Ostrom and Singer,[14] who studied the average rate of disappearance of bacteria sprayed on the mucous membrane of the nose. In 400 tests on forty-two normal persons, the average number of viable bacteria thus introduced was estimated at 20,000,000. From 90 to 95 per cent of the latter were rendered nonviable within five to ten minutes. Swabs taken from the posterior pharyngeal wall showed that the bacteria are not removed to an appreciable extent by being passed into the throat from the nose. As many as eight successive seedings of the same bacteria at thirty minute intervals were placed in the nose; yet there was no evidence of any exhaustion of the disinfecting mechanism. Cultures obtained from the bacteria that have survived the initial period of disinfecting action were removed as promptly as the original strain from the nasal mucosa. Repeated applications did not lead to the development of a resistant strain. Environmental temperature (such as climatic variations might represent) were not without some effect on the autosterilizing power. Persons placed in a cold room (45 F., humidity 30 per cent) did not differ in the self-disinfecting power of the nose from that found in the ordinary room temperature (70 F., humidity 70 per cent). The same subjects placed in hot rooms (95 F., humidity 90 per cent) showed a retardation in the removal of sprayed bacteria. In from forty-five minutes to an hour the bacteria had disappeared. The rapid reduction of 90 per cent of the inoculated dose within five minutes did not usually hold for the hot room environment. We are thus reminded that this self-disinfecting power of the mucous membrane of the nose of healthy volunteers may be of major importance in explaining the failure to seed the nose and throat with bacteria in influenza and other respiratory epidemiologic studies.

13. Winslow, C.-E. A., and Kligler, I. J.: Am. J. Pub. Health **2**: 663, 1912.
14. Arnold, L.; Ostrom, M. L., and Singer, Charlotte: Autosterilizing Power of the Nasal Mucous Membrane, Proc. Soc. Exper. Biol. & Med. **25**: 624 (May) 1928.

Syndrome of Coronary Thrombosis.—Of late much has been written of the syndrome of coronary thrombosis, or cardiac infarction, as it is more accurately entitled. This syndrome consists of a severe attack of cardiac pain, often coming on at night, followed in a day or so by evidences of serious damage to the muscular wall of the heart. The patient when seen in or after the attacks of pain looks pale and collapsed, and the pain is obviously intense. Usually it is retrosternal, sometimes behind the xiphisternum, and constricting in character. In some cases there is vomiting, and this, with an epigastric location of pain, may inspire a diagnosis of biliary colic. Either at the time, or within a day or two, the pulse becomes rapid, often alternating, and sometimes irregular, with the total arrhythmia of auricular fibrillation or the hasty action of flutter. If it remains regular a notable fall in systolic pressure is often noted, with a corresponding reduction of the pulse pressure.—Coombs, C. F.: Heart Attacks, *Brit. M. J.*, June 16, 1928.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Periscopes for Hospital Attendants.—The *Modern Hospital* notes that a $100,000 hospital is under construction in Fresno which will be in charge of Charles Brown, formerly of the Southern California State Hospital, Patton. An interesting feature of this building is the introduction of a periscopic arrangement whereby attendants will be able to observe patients in their rooms without disturbing the latter and without their knowledge.

Demand for Pharmacists.—The college of pharmacy of the University of California, San Francisco, is planning to hold a summer session in 1929. The dean of the college, Henry C. Biddle, Ph.D., states that the demand for trained pharmacists was never so great as it is today, and that conditions make it more necessary than ever that pharmacists have a college or university training. The California College of Pharmacy was founded in 1872. The registration in the year just closed was 308.

Unlicensed Practitioner Sentenced.—Dr. Bernard Pehr, a graduate of Baylor University College of Medicine, Dallas, Texas, 1915, pleaded guilty to violation of the medical practice act, June 15, and was sentenced to 180 days in jail. The sentence was suspended for two years on condition that he would not further violate the medical practice act. Pehr, it appears, was born in Germany and is not licensed in any state. He has been in charge of a clinic at Stockton maintained as a branch of the San Joaquin County General Hospital.

Los Angeles' New Medical School.—The University of Southern California is opening a new medical school, which will receive students this fall for the first preclinical year of the medical course. An additional year's work will be added each year until 1931, when the full four-year course will be offered. The school will meet class A requirements. There are on the campus laboratories, libraries and equipment available for medical students, and a unit to house the biologic sciences is being erected. The university has set aside an endowment for the school, to enable it to start the course this fall; $100,000 additional endowment must be obtained each year for the next five years to provide for expansion. The university has organized an advisory committee of Los Angeles physicians which it consults in all matters relating to the medical school; the executive committee was selected by the Los Angeles County Medical Association and the medical alumni of the university, and to them will be submitted the credentials for the new dean and prospective staff of the school. Full-time professors will be needed in each of the basic departments; other members of the staff will be added as the need arises. The university will accept offers from Los Angeles institutions to provide the facilities of a teaching hospital. The executive committee comprises Drs. Edward M. Pallette, president of the Los Angeles County Medical Association; Wayland A. Morrison, chairman, educational committee of the medical society; Wesley W. Beckett, chairman, educational committee, University of Southern California Medical Alumni Association, and Joseph M. King and Ernest A. Bryant.

CONNECTICUT

Foundation for Study of Children's Diseases.—Mr. A. E. Fitkin, New York, has given $1,000,000 to Yale University, New Haven, to establish a foundation for the care of children, from the standpoints of curative and preventive medicine, the study of children's diseases, and the training of men for the achievement of these purposes. A building costing $500,000, to be known as the Raleigh-Fitkin Memorial Pavilion, will be erected; the remainder of the fund will be for permanent endowment. The foundation was established in memory of the donor's son.

Appointments to Faculty of Yale.—Yale University announces among others the following appointments in the school of medicine:

Dr. John R. Paul, assistant professor of medicine.
George Valley, Ph.D., instructor in general bacteriology.
George A. Hunt, Ph.D., instructor in bacteriology and immunology.
Dr. Douglas H. Sprunt, instructor and resident in pathology.

Dr. Harry M. Zimmerman, instructor and assistant resident in pathology.
Dr. Henry W. Ferris, instructor in pathology.
Dr. Marvin M. Scarbrough, lecturer in pathology.
Dr. Joseph L. Hetzel, instructor and resident in pediatrics.
Theodore H. Rider, Ph.D., instructor in pharmacology and toxicology.
Dr. William E. Callison, instructor in pharmacology and toxicology.
Allen D. Keller, instructor in physiology.
Dr. Everett S. Rademacher, clinical instructor in psychiatry.
Dr. Frederick W. Roberts, instructor and resident in surgery.
Dr. Dennis F. O'Connor, instructor in orthopedics.
Dr. Vincent D. Vermooten, instructor in urology.

Progress in Laboratory Work.—Since 1906, when the state bacteriologic laboratory was established, it has moved four times into larger quarters. The original location was a building on the campus of Wesleyan University, Middletown, and Herbert W. Conn, Ph.D., professor of biology at the university, was the first director. It moved in 1908 to another university building in Middletown. After Professor Conn's death in 1917, it moved to New Haven on the grounds of the state agricultural experiment station. The laboratory remained there seven years, during which time the staff increased from about six to fourteen workers. It moved to Hartford in 1924 to the second and third floors of a building near the state capitol and here was first placed under a full-time director. According to the state department of health, the last move has been coincident with rapid growth, even though new types of work have been limited strictly to public health activities. In the first annual report of the laboratory in 1906, the total number of examinations reported was 1,239, while in May, alone, of 1928, the number of examinations was 16,501. The number of workers is now twenty-nine, of whom fifteen are scientifically trained college workers. The department says that physicians and health officers are constantly making increased demands for service, but more work cannot be undertaken in the present crowded quarters.

ILLINOIS

Health Instruction at the State Fair.—The state department of health, in response to the interest of physicians, health officers and nurses in the better baby conferences and the physical examination project of adults that have been conducted at the state fairs, has planned for a school of public health instruction at the fair, August 20-24, for persons desiring special information on public health. There will be continuity of instruction for those desiring to stay the entire time. The tentative program covers epidemiology, sanitary engineering, social hygiene, public health education and child hygiene, and public health nursing. The instructors will be the chiefs of the divisions in the health department.

Institute of Chemistry at Evanston.—Prof. A. I. Kendall of Northwestern University Medical School will give a series of seven lectures during the first week of the institute to be given by the American Chemical Society, at Evanston, July 23-August 18; Paul Nicholas Leech, Ph.D., director, chemical laboratory of the American Medical Association, will lecture, August 6, on "Chemical Quackery." On August 11, William T. Bovie, Ph.D., professor of biophysics, Northwestern University Medical School, will speak on "Chemical Aspects of Living Cells"; Dr. Harry Gideon Wells of the University of Chicago, on "Immunology as a Branch of Chemistry"; Major Cyrus B. Wood, medical corps, U. S. Army, on "Chemical Sterilization of Water," and Dr. E. Ellice McDonald, Philadelphia, on "Chemical Aspects of Vital Systems"; August 13, F. W. Mohlman of the Chicago Sanitary District will discuss "Sanitation." The program, August 18, has to do with national preparedness; among the speakers will be Col. Harry L. Gilchrist, medical corps, U. S. Army, on "Present Problems of Chemical Defense," and W. Lee Lewis on "Science in National Defense."

Chicago

Picnic at Lake Maxinkuckee—All Invited.—The North Side and the Aux Plaines branches of the Chicago Medical Society and the Chicago Laryngological and Otological Society are planning to spend the day at Culver Military Academy on Lake Maxinkuckee, Indiana, August 7. There will be golf, tennis, boating, dancing and other games. Members of the Chicago Medical Society and their friends are invited. For details call Miss Wolf, Randolph 0244.

Many Scholarships Available.—The trustees of the LaVerne W. Noyes estate announced, July 3, that 700 college and university scholarships for the coming year have been made available for men and women who served during the World War and their descendants. The scholarships are in addition to several hundred available annually at the University of Chicago under a foundation established by Mr. Noyes. Almost the entire field of learning is covered. Among the many colleges selected at which this work may be done is Rush Medical College, where fifty scholarships have been made available.

Society News.—At the recent election of the Chicago Medical Society, Dr. Frank R. Morton was made president; Dr. Charles B. Reed, president-elect; Dr. James H. Hutton, secretary, reelected, and Drs. Charles E. Humiston, G. Henry Mundt, John R. Harger, John S. Nagel and Arthur H. Geiger, councilors at large.——After about five years' service as medical director of the Chicago Tuberculosis Institute, Dr. Hiram H. Bay has resigned to become medical director of the Illinois Commercial Men's Association and Dr. Julius B. Novak has been appointed to succeed him.——Joseph H. Simons, Ph.D., chemistry department, Northwestern University, will be on leave of absence during the next academic year, working at Cambridge University, England, under a fellowship of the International Education Board.——Dr. James G. Carr, Jr., has been elected president of the Cook County Hospital Interns' Alumni Association.

INDIANA

Dr. Rutherford Goes to Iowa.—Dr. Cyrus W. Rutherford, associate in ophthalmology, Indiana University School of Medicine, Indianapolis, has gone to Iowa City to accept an appointment as associate professor and acting head of the department of ophthalmology in the State University of Iowa College of Medicine. Dr. Rutherford will take up the work of Dr. Cecil S. O'Brien, head of the department, who is on a two years' leave of absence for study in Europe.

Society News.—Dr. Ada E. Schweitzer, Indianapolis, of the state board of health addressed the Rush County Medical Society, June 12, on health work among school children. The society voted at this meeting in favor of the erection of a county hospital as soon as possible.——Eye, ear, nose and throat specialists of Indianapolis held a picnic at Lebanon, June 20, and a golf tournament which was participated in by seventeen of the members. At the business meeting, Dr. Lafayette Page was elected president for the ensuing year.——Dr. Henry S. Leonard has been appointed a member of the board of health of Indianapolis to succeed Dr. William E. Mendenhall, whose term expired, May 31.——The Community Hospital, Inc., Brazil, is going out of business on the opening of the Clay County Hospital and its complete equipment is for sale. The Community Hospital is owned by five physicians of Brazil.

MARYLAND

Full-Time County Health Service.—The appointment of Dr. Timothy A. Callahan as health officer of Harford County makes this the ninth county in Maryland to have full-time health service. The nine counties represent about half of the population of the state outside of Baltimore. There are also three sanitary districts in the state, each consisting of two or three counties with a full-time man in charge of each district. Part-time health service is maintained in Anne Arundel, Howard, Garrett, Somerset, Washington, Wicomico and Worcester counties.

Mental Hygiene Commissioner Appointed.—Governor Ritchie has appointed Dr. George H. Preston, Baltimore, commissioner of mental hygiene of Maryland to succeed the late Dr. Arthur P. Herring. Dr. Preston graduated from Johns Hopkins University School of Medicine in 1915; spent a year at the Henry Phipps Psychiatric Clinic and another on the Johns Hopkins Hospital staff; served as a psychiatrist during the World War, and later established the state training school for feebleminded at Gracewood, Ga., where he was in charge four years. He was for three years at the Children's Clinic, Richmond, Va., and, since Jan. 1, 1928, has been executive secretary of the Mental Hygiene Society of Maryland.

Personal.—Dr. Dean Lewis, Baltimore, has been made a foreign member of the Società Medico-Chirurgica of Bologna and an Ausserordentliches Mitglied der deutschen Gesellschaft für Chirurgie.——Dr. Hugh H. Young will be awarded a fellowship by the Royal College of Surgeons of Ireland the first week in August. Dr. Young sailed for Europe, June 20.——Dr. George H. Ramsey has been appointed associate professor of epidemiology in the Johns Hopkins University School of Hygiene and Public Health; Dr. Lloyd W. Ketron has been appointed associate professor of clinical dermatology at Johns Hopkins University School of Medicine, and Dr. George E. Bennett, associate professor of orthopedic surgery.——Dr. John M. T. Finney was elected president of the Community Fund of Baltimore, June 22.——Dr. John E. Sansbury, Forestville, was elected president, May 27, of the Medical Society of Virginia,

Maryland and the District of Columbia, and Dr. William T. Davis, Washington, D. C., secretary.

Johns Hopkins Hospital Needs Larger Clinics.—According to the superintendent of the Johns Hopkins Hospital, Baltimore, Dr. Winford H. Smith, the greatest need of that institution is additional facilities for the care of persons unable to pay the entire cost of hospital treatment. In the program of enlargement planned eight years ago, a scheme was included whereby the reconstruction of two old wards would provide a new medical clinic and the enlargement of three wards would provide a new surgical clinic, each clinic having a capacity of 200 beds, instead of the eighty-five now in the wards. Approximately 40 per cent of the patients in these wards pay nothing for treatment, while the remainder pay about half the amount it costs the hospital. Remodeling the old wards to accommodate the new medical and surgical clinics will cost about $1,300,000, which funds are in hand. To support the new units, however, an endowment of $3,000,000 will be necessary. When the entire improvement program is completed the capacity of the hospital will be 1,000 beds, approximately 700 more than there were in the original group of buildings.

MASSACHUSETTS

State Medical Election.—At the annual meeting of the Massachusetts Medical Society, Worcester, June 5-6, Dr. John M. Birnie, Springfield, Mass., was elected president, and Dr. Walter L. Burrage, Brookline, was reelected secretary. The next annual session will be in Boston, June 11-12, 1929.

Society News.—Dr. Henry B. Elkind, Boston, has been made president of the reorganized Massachusetts Central Health Council, which is composed of the Massachusetts Medical Society, the state department of health, the New England Heart Association and other health agencies.——The Trudeau Society of Boston was addressed, June 4, by Dr. Evarts A. Graham, St. Louis, on pulmonary suppuration.——A marble bust of the late Dr. John Collins Warren will be placed soon in the Warren Anatomical Museum at the Medical School of Harvard University.

Appointments and Promotions at Harvard University.—Harvard University has announced, according to *Science*, the following promotions and appointments:

Joseph C. Aub, associate professor of medicine and physician at the Collis P. Huntington Memorial Hospital. He has been a member of the medical school faculty since 1920.

William L. Aycock, assistant professor of preventive medicine and hygiene. In 1916 he served as diagnostician with the New York State Department of Health, and later as director of the research laboratory of the Vermont Board of Health and instructor in preventive medicine in the university.

Chester M. Jones, assistant professor of preventive medicine and hygiene. Since 1925 he has held the Henry Pickering Walcott fellowship in clinical medicine.

Monroe A. McIver, assistant professor of surgery. In 1921 he was national research fellow in physiology and has been an instructor in surgery in the university since 1924.

John Homans, assistant professor of surgery. Since 1916 he has been an instructor in surgery in the university.

Richard H. Miller, assistant professor of surgery. Since 1919 he has held the position of instructor in surgery.

Robert C. Cochrane, assistant professor of surgery. He has been an instructor in urinary surgery in the university since 1924.

Merrill C. Sosman, assistant professor of roentgenology. He has served as instructor in the medical school and consulting physician in the Collis P. Huntington Memorial Hospital since 1924.

Clifford L. Derick, assistant professor of medicine. He was recently connected with the Peter Bent Brigham Hospital, and since 1924 with the Rockefeller Hospital in New York City.

Herrmann L. Blumgart, assistant professor of medicine. He has been connected with the medical school since 1923 as instructor in medicine.

Harold Coe Stuart, assistant professor of child hygiene. Dr. Stuart has been a member of the department since 1922.

MISSOURI

Dr. Lehman Goes to Virginia.—Dr. Edwin P. Lehman, Washington University Medical School, St. Louis, has been appointed head of the department of surgery and gynecology in the University of Virginia Department of Medicine, Charlotteville, and will assume his new duties, September 1.

Ten Years for Narcotic Violation.—Dr. Thomas S. Manning, St. Louis, was sentenced, June 27, by Federal Judge Davis to ten years in the penitentiary for violation of the Harrison Narcotic Law; he was unable to furnish a $10,000 bond, and was confined in jail. Manning had been sentenced three times previously, it is reported, for violation of the narcotic laws but each time the sentences were reversed by the court of appeals on technicalities. The present sentence was for five years each on eight counts to run concurrently and five years each on twenty-one counts to run concurrently.

Hospital News.—A bed for messenger boys in St. Luke's Hospital, St. Louis, has been given a $5,000 endowment by Mrs. George F. Bergfeld in memory of her husband, who was a real estate dealer.——Dr. William M. West opened his new hospital at Monett, May 1, which is a two story, modern building and well equipped. Dr. West has conducted a hospital at Monett for fourteen years, gradually improving and adding to its equipment.——Mr. W. B. Pettibone, banker, has given $100,000 for an addition to Levering Hospital, Hannibal. St. Elizabeth's Hospital, Hannibal is building a $75,000 addition. ——The new $50,000 negro tuberculosis sanatorium at Mount Vernon was opened, May 26.

Personal.—Dr. Rutherford B. H. Gradwohl, St. Louis, lieutenant colonel, U. S. Naval Reserve, was on duty with the U. S. Fleet in Hawaiian waters, April 12-May 20.——Dr. Emmett P. North, St. Louis, formerly president of the state medical society, had three ribs broken at Minneapolis, June 12, when he was struck by a motorcycle.——Dr. George W. Becker, after twelve years' service as police department surgeon in St. Louis, has resigned to run for the nomination for coroner. ——Dr. James Harvey Jennett has been appointed night superintendent of the General Hospital, Kansas City, and Dr. John S. Knight, assistant superintendent. —— Dr. John B. Carlisle, Sedalia, has been appointed assistant division surgeon of the Missouri Pacific Railroad.

NEW YORK

Hospital News.—The Westchester County Board of Supervisors has let contracts for the construction of an eighty-bed psychopathic hospital pavilion at Eastview on the Grassland Hospital property.——The Western New York Hospital Association was formed during the graduating exercises at the Buffalo City Hospital in June, and Rev. John P. Boland, director of the Catholic hospitals in the diocese of Buffalo, was elected chairman of the executive committee. Eighteen hospitals were represented at the initial conference.

Society News.—Dr. Charles A. Lawler, Salamanca, has been elected president of the Cattaraugus County Medical Society; Dr. Leo E. Reimann, Franklinville, vice president; Dr. Raymond B. Morris, Olean, secretary, and Dr. Joseph P. Garen, delegate. Among others at this annual meeting, Dr. George J. Eckel, Buffalo, read a paper on "Significance of Kidney Lesions." —— The Wyoming County Medical Society gave a dinner recently in honor of Drs. James E. Slaught, Warsaw, and John Harding, Perry, commemorating their "fifty years of ethical medical practice"; both physicians were presented with gifts and flowers.——At the annual meeting of the Eastern Eye, Ear, Nose and Throat Association, Albany, Dr. Morris S. Lord, Schenectady, was elected president for the ensuing year.——Erie County Medical Society, Buffalo, has appointed a committee to give weekly medical talks from Station WGR.

Personal.—Dr. Elizabeth B. Thelberg, professor of hygiene and physiology, Vassar College, Poughkeepsie, and until recently president of the Medical Women's National Association, has been notified that the Serbian government has decided to award her the Order of Santa Sava in recognition of her work on the American Women's Hospitals Committee in Serbia.—— Dr. Robert Hebenstreit, for about fifty-seven years a practitioner in Buffalo and now of New York, was elected to retired membership in the state medical society at the recent annual meeting in Albany.——Dr. Harold Chandler Clark has been appointed assistant attending physician in pediatrics at New Rochelle Hospital, New Rochelle, and also at the Seaside Hospital of St. John's Guild, Staten Island. Dr. Clark sailed, July 12, to visit clinics in South America and Europe.——Dr. Philetus A. Hayes, health officer of the village of Afton, Chenango County, for more than thirty-two years, resigned, July 1.

Report of Committee on Nursing.—The committee appointed by the Medical Society of the State of New York to investigate the nursing problem reported to the house of delegates at the Albany annual meeting. There appears to be no shortage of nurses, the committee said, but their distribution in rural communities is faulty and the question from the point of view of demand, distribution and supply is acutely economic. Among other items in the report, published in the *New York State Journal of Medicine*, is that, even in large cities, the number of children hospitalized is so small that there is very little general experience (for nurses) in handling medical cases; that preventive vaccines and the general dissemination of health knowledge to the public through the schools, the press and the radio, and preventive medicine in general, are influencing the incidence of disease among children to such an extent that hospitalization among children will continue to decrease. The committee believes that the nurse views the future of her profession with dismay as she sees the increasing output of an increasing number of training schools. It is esti-

mated that at the present rate of increase, 60,000 nurses will graduate in 1965. There are 2,096 training schools in this country, some of which seem to be conducted merely because they need the service of nurses in their own hospitals. The committee recommends, among other things, that the county medical societies endorse the establishment of official registeries, the encouragement of hourly part-time or group nursing, and the extension of the visiting nursing service; that four years of high school be the minimum requirement to enter schools of nursing; that the number of training schools be reduced; that didactic teaching in the basic sciences be given in the high schools, and that all hospital training be devoted to training in the nursing arts.

New York City

Naturopath E. A. McFadden Held.—An investigation made by the state board of medical examiners led to the arrest of Naturopath Earl A. McFadden on a charge of practicing medicine without a license. According to the New York *Times*, the charge grew out of the death of a patient, May 10, whose illness McFadden is said to have diagnosed as a "stomach disorder." Two physicians found the patient just before death to have "cerebral paralysis, brain tumor and congestion of the lungs." Testimony in court indicated that McFadden received $758 for treating the patient.

Personal.—Dr. Joseph Nack has been appointed assistant attending gynecologist to the Harlem Hospital outpatient department and to the Vanderbilt Clinic.——Dr. Wilder G. Penfield has been appointed clinical professor of neurologic surgery at McGill University Faculty of Medicine, Montreal.——Dr. David L. Engelsher has been appointed chief of the asthma and hayfever clinic at Fordham Hospital.——James Kendall, Sc.D., professor of chemistry, New York University, will soon leave for Scotland where he has been appointed professor of chemistry at the University of Edinburgh; he was recently given a farewell dinner by the department of chemistry.

Cerebrospinal Meningitis Increases.—Help for Physicians.—The municipal department of health calls attention to a sharp rise in the prevalence of cerebrospinal meningitis since March 1, amounting to more cases than have been reported for ten years. Thus far this year 385 cases of cerebrospinal meningitis have been reported, while ten years ago 477 were reported during the entire year. The department of health is prepared to assist physicians in connection with this disease. On request by the attending physician, a member of the staff of the department's meningitis division will do a lumbar puncture for diagnosis or, if preferred, the physician himself may make the puncture and send the fluid direct to the research laboratory at the foot of East Sixteenth Street. In either case a prompt report of the result will be sent to the attending physician. In suspicious cases, antimeningococcus serum is injected at the time of withdrawing the fluid, and in positive cases subsequent injections will be made as indicated or requested. The department urges physicians to report all cases of meningitis and to avail themselves of this service. They may telephone Stuyvesant 8100, Ext. 86.

Homer Folks Estimates Cost of Illness.—In a report, submitted, July 12, to the health section of the International Conference on Social Work, Paris, Homer Folks, LL.D., New York, said that illness costs the people of the United States, annually, more than 15 billion dollars, yet the country is spending only about $76,000,000 for the prevention of illness. Dr. Folks, according to the State Charities Aid Association of New York (of which he is secretary), is the first authority to make a detailed estimate of who actually pays the various costs of illness in the United States. He estimates the total cost of all kinds up to the day of recovery or death of the patients at $3,729,925,396, or $31.08 per capita per annum, and the loss of future net earnings of persons dying prematurely at 12 billion dollars, or an annual loss of $131 per capita. Of the total cost of illness, he says, 93.8 per cent is borne by patients or their families. Dr. Folks shows how he arrived at his estimate. Some of the items are: "Expenditures for physicians," $745,000,000; "Expenditures for quacks," $120,000,000; "Expenditures for dispensaries," $2,233,824; "Expenditures for nursing care in patients' homes," $151,900,000. He discusses the factors entering into the cost of illness. He states that the modern hospital has become the largest factor in distributing the direct cost of illness. Combining public and private hospitals in New York State, with a total expenditure of $46,000,000, the receipts from patients or their relatives or friends amount to $20,750,000, while $25,250,000 is met by others than the patients benefited, coming from such sources as endowments, voluntary contributions and public taxation. Applying the New York ratio to the country as a whole, Dr. Folks estimates that receipts (of hospitals) from patients or their relatives or friends amount annually to $261,560,360, while $142,941,212 comes from other sources.

PENNSYLVANIA

Memorial to Dr. Ziegler.—A memorial infirmary for the care of students was formally dedicated at Bucknell University, Lewisburg, June 5. It was presented to the university by Mrs. Ziegler in memory of her late husband, Dr. S. Lewis Ziegler, who was a member of the board of trustees of the university for many years (THE JOURNAL, Jan. 9, 1926, p. 134). The address at the dedication was made by Judge J. Warren Davis of the U. S. Circuit Court of Appeals.

Seventh Councilor District Meeting.—The annual meeting of the seventh councilor district of the Medical Society of the State of Pennsylvania was held in Williamsport, July 13. Dr. Jonathan M. Wainwright, Scranton, conducted a cancer clinic at the hospital in the morning and gave an address on "Cancer from the Point of View of the General Practitioner"; Dr. Charles G. Kerley, New York, gave a lantern demonstration on "Celiac Disease of Gee," and after dinner, Dr. George T. Follansbee, Cleveland, gave an address on "Why Tradition, History and Ethics?" Other speakers included Drs. Lee M. Goodman, Jersey Shore, president of the Lycoming County Medical Society· Arthur C. Morgan, Philadelphia, and Thomas G. Simonton, Pittsburgh, president and president-elect, respectively, of the state medical society; Walter F. Donaldson, Pittsburgh, secretary of the state society, and Paul R. Correll, Easton, chairman, committee on public health legislation.

Pittsburgh's Children's Hospital.—On the grounds of the University of Pittsburgh is an eight story, fireproof building, the gift of more than 22,000 citizens of that city and neighboring

towns. It is the new Children's Hospital, opened in 1926 as a continuation of the work of the children's hospital that had been opened in 1887 by a small group of persons who supported the institution by their own contributions. Sufficient state aid was later obtained to pay about one third of the expenses, and in 1911 "Flower Day" was established; the public then contributes generously toward the support of the hospital. The Children's Hospital of Pittsburgh has had in its various departments more than 100,000 sick children. The new building is surrounded by open spaces giving an abundance of light, and broad porches are accessible to every ward. Among the various departments is the training school, including the demonstration room with unusual equipment and practical nursing procedures on the seventh floor. The infant's department on the third floor, for example, has ten crib cubicle rooms, one ward of ten cribs with glass partitions and three smaller wards. In a separate wing on this floor are the fluoroscopic, physical therapy, hydrotherapy, radiographic, dental and photographic departments and the reception room. There are private and semiprivate rooms on the fifth floor, and also the laboratory, medical library, record room and reception room. The major operating rooms are on the sixth floor, and on the eighth are four entirely separate units for complete isolation of contagious diseases. The dispensary of the Children's Hospital is open day and night to emergencies, and connected with it are medical, surgical, orthopedic, postural and dental clinics. During the year 1926-1927, the number of free patient days was more than 28,000. The president of the board of managers of the hospital is Dr. Thomas S. Arbuthnot.

V 9
192

Philadelphia.

Jefferson Desires Souvenirs of Staff Members.—The committee on archives of Jefferson Medical College and Hospital will appreciate information concerning gifts of paintings, etchings, drawings, silhouettes, busts, photographs or cartoons of physicians who have served on the staff, or etchings, paintings or similar souvenirs of the old college or hospital buildings. Gifts, information or loans may be addressed to the committee on archives, care of chief resident physician, Jefferson Medical College Hospital, Philadelphia.

Medical Alumni Smoker.—The two-day reunion of the medical alumni of the University of Pennsylvania ended, June 16, with a smoker in Weightman Hall. Alumni were present from eighteen states and one foreign country, in all 240. The secretary of the Alumni Association, Dr. Charles A. Behney, was absent attending an alumni meeting at Minneapolis during the annual session of the American Medical Association, where ninety-six Pennsylvanians gathered. The prize for the oldest alumnus present went to Dr. Flavius J. Williams of the class of '64. The class of '03 won the cup for the largest number of members present (thirty). Altogether fifty classes were represented. Dr. Samuel M. Hamill was elected president of the Alumni Association for the ensuing year.

Personal.—Dr. Edmund B. Spaeth received the first award of the University of Buffalo medal in ophthalmology at the recent commencement; this medal is made possible by a fund provided by Dr. Lucien Howe, professor emeritus of ophthalmology at the university.——Dr. George E. Pfahler has gone to England to attend the International Conference on Cancer in London, July 16-22, and to represent various American radiologic societies and the faculty of the graduate school of medicine of the University of Pennsylvania at the International Congress of Radiology, Stockholm, Sweden, July 23; William Seifriz, Ph.D., will also represent the University of Pennsylvania at the cancer conference.——Dr. Henry B. Shmookler has been appointed director of Mount Sinai Hospital for the coming year.——Dr. E. Ellice McDonald has been appointed research oncologist in the Philadelphia General Hospital and a member of the radiologic-clinical staff.——Dr. Joseph Edeiken, chief resident physician, Mount Sinai Hospital, has been awarded a fellowship by the board of trustees which will enable him to spend a year studying in Vienna.

Dr. Opie to Direct Study of Leukemias.—It was announced, July 1, that the University of Pennsylvania had received an anonymous gift of $100,000 for the conducting of a study of the leukemias and lymphomas. The study will be made in the Henry Phipps Institute for the Study, Prevention and Cure of Tuberculosis, Seventh and Lombard streets, under the direction of Dr. Eugene L. Opie, director of the laboratory of the institute and of the department of pathology of the university's school of medicine. Dr. Opie was recently elected president of the National Tuberculosis Association. He was formerly president of the American Association of Pathologists and Bacteriologists, of the American Society for Experimental Pathology, and of the Philadelphia Pathological Society, a member of the Rockefeller Institute for Medical Research, 1904-1910, and professor of pathology and dean, Washington University Medical School, St. Louis. Dr. Opie served during the World War in France and is now a colonel in the reserve. He is at present in Jamaica organizing forces to control tuberculosis. He will return this month, and then leave to attend the biennial meeting of the International Union Against Tuberculosis in Rome, Italy.

SOUTH DAKOTA

State Medical Meeting at Hot Springs.—The forty-seventh annual meeting of the South Dakota State Medical Association will be held at Hot Springs, August 7-9. The association will be the guest of the Black Hills District Medical Society and of Battle Mountain Sanatorium, the former providing the entertainment, the latter the scientific program. Automobiles will leave, Thursday, for sightseeing through the hills, stopping for lunch at State Park Inn, then proceeding by the Needles, Sylvan Lake and Hill City to Lead and stopping at Deadwood for the night, where the association will be the guest of the city for the last of the "Days of 76." The public meeting, Wednesday evening, at the Hot Springs City Auditorium will be addressed by Dr. William C. Woodward, secretary, Bureau of Legal Medicine and Legislation, American Medical Association, Chicago; by E. W. Martin and by local physicians. There will be a banquet preceding this meeting given by the Battle Mountain Sanatorium. The house of delegates and the council will meet Tuesday. The scientific program includes a symposium on physical therapy and an address by Mr. H. J. Holmquest, secretary, Council on Physical Therapy, American Medical Association; a symposium on tuberculosis; a paper by Dr. Oscar R. Wright, Huron; a paper and clinic on diseases of the eye by Dr. Harold Gifford, Omaha, and the president's address by Dr. Silas M. Hohf, Yankton.

VIRGINIA

Personal.—Dr. Fred J. Wampler has resigned as director of the Accomac-Northampton Health Unit to become professor of preventive medicine, assistant professor of medicine and director of the outpatient department at the Medical College of Virginia, effective in July.——Dr. John W. Cox, Alexandria, was recently appointed a field representative of the American Society for the Control of Cancer, New York.——Dr. George E. Wiley, Bristol, is the author of a new book of negro dialect stories entitled "Mixt Pickle."

Society News.—Dr. Alexander F. Robertson, Jr., Staunton, has been appointed to the state board of medical examiners to succeed the late Dr. Robert Glasgow.——At the ninth annual meeting in Newport News of the Virginia Society of Oto-Laryngology and Ophthalmology, Drs. Samuel R. Skillern, Jr., Philadelphia, and James N. Greear, Jr., Washington, D. C., were the guests of honor. Dr. Franklin M. Hanger, Staunton, was elected president. The attendance was sixty-nine. The next meeting will be at Staunton, May, 1929.——Dr. Thomas McCrae, Philadelphia, addressed the semiannual meeting of the Medical Association of the Valley of Virginia, May 31, at Harrisonburg.——About sixty physicians attended the Clinch Valley Medical Society, April 26, at Tazewell; Dr. John S. Horsley, Jr., Richmond, gave a lantern slide demonstration on "The Results of Plastic Surgery," and Dr. Harry H. Haggart, Bluefield, W. Va., a lantern demonstration of bronchoscopic cases. Officers of the state medical society were present. The scientific sessions were followed by a banquet. The next meeting will be in Appalachia.——A county medical society was organized in Scott in April with twelve charter members; Dr. Nathan W. Stallard, Dungannon, is president.——The University of Virginia held a series of postgraduate clinics for three days in April which were attended by seventy-one Virginia physicians and others outside the state. This is the third annual postgraduate clinic and the attendance is growing.

WASHINGTON

Society News.—Dr. Albert B. Murphy, Everett, addressed the Puget Sound Academy of Ophthalmology and Oto-Laryngology, Seattle, May 1, on "Agranulocytic Angina."——The King County Medical Society has a welfare committee, the object of which is to keep ethical members who are temporarily embarrassed from financial worry. The committee reports its financial assistance only to the board of trustees to insure privacy. This work was recently outlined before the economical and specialty section of the society by Dr. James Tate Mason. The society also has a location and advisory committee which assists young physicians and interns in finding opportunities. The interns of the city were guests of the committee at a smoker, May 31. Several of the older members present gave the young men the benefit of their experience in getting started in practice.

WYOMING

Personal.—Nancy Bayley, Ph.D., of the staff of the University of Wyoming, has been appointed research associate at the Institute of Child Welfare of the University of California, Berkeley. Her work will have to do with a survey of the development of children which the institute is fostering.——Dr. Walter H. Hassed has been appointed secretary of the state board of medical examiners, succeeding Dr. George M. Anderson, resigned.

GENERAL

Fund for Hospital in Japan.—A campaign is being conducted for about $3,500,000 for St. Luke's International Hospital, Tokio, Japan. A recent anonymous gift of $100,000 brought the amount subscribed at present to more than $1,000,000. The plan is to have the total amount ready for presentation at the enthronement of the emperor of Japan in November. The American physician, Dr. Rudolf B. Teusler, who has directed the hospital for many years, is in this country to aid the campaign.

Decrease in Automobile Deaths in Four Weeks.—For the four weeks ending June 16, the number of deaths due to automobile accidents in seventy-seven large cities of the United States was 498, as compared with 506 in the four weeks ending June 18, 1927, according to the U. S. Department of Com-

merce. Since May, 1925, the lowest total of deaths for a four week period was 346 for the period ending March 27, 1926, and the highest was 686 for the period ending Nov. 5, 1927. For the year ending June 16, 1928, the total number of deaths in these cities from this cause was 7,198, while the total for the year ending June 18, 1927, was 6,897.

Tour of Travel Study Club.—The Travel Study Club of American Physicians will sail from New York, August 16, on the S. S. *München*, for its annual tour, visiting clinics in Berlin, Vienna and Munich, and attending the Fifth International Congress for Industrial Accidents and Occupational Diseases in Budapest, September 3-7, and the First International Conference on Light at Lausanne and Leysin, September 10-13, the intervening two days being spent at Bad Reichenhall. The party will proceed to Nice and Monte Carlo, and will spend twelve days visiting the principal cities of Spain, where the governor has appointed a committee to act as host in cooperation with the medical faculties of Barcelona and Madrid. The party will embark, September 28, on the S. S. *Conte Grande* at Gibraltar and is due in New York, October 5. Inquiries may be addressed to the secretary, 223 East Sixty-Eighth Street, New York.

Occupation and Nativity of Federal Prisoners.—Apropos of the proposed legislation to establish two prison farm hospitals to segregate prisoners convicted under the federal narcotic law is the classification of prisoners in the penitentiaries at Leavenworth, Atlanta and McNeil Island by the department of justice. There were 7,171 prisoners in these institutions, of whom 2,085 were confined for violation of the federal narcotic law, 879 for violation of the prohibition law, 851 for violation of the postal laws and 780 for violation of the national motor vehicle theft act. The larger number of prisoners by occupation were: laborers, 1,058; farmers, 641; chauffeurs, 325; barbers, 211; cooks, 198. However, the occupations listed include scores of different classes of employments by the various prisoners. The nativity records show that of the total number of prisoners, 937 were foreign-born, exclusive of those whose parents were foreign-born. The number of foreign-born from Italy is 245; Mexico, 156; Russia, 94; Austria, 45; Bulgaria, 39; China, 29.

Magnetic Survey of the Oceans.—The nonmagnetic yacht *Carnegie* left Washington, D. C., May 1, on a three-year cruise, which will cover all oceans and add 110,000 miles to the 290,000 miles which the vessel has already traversed on six previous cruises, to make a magnetic and electric survey of the oceans. The first leg of the cruise, according to J. A. Fleming, department of terrestial magnetism, Carnegie Institution of Washington, will be to Plymouth, England; then the yacht will proceed to Iceland, to the Barbados, and to the Canal Zone about the end of October. The scientific personnel totals eight men, among whom is Dr. John Harland Paul, of St. Louis, a recent graduate of the Medical School of Harvard University. The preparation for the cruise has received cooperation and expert advice from governmental and private sources in Europe and America, which have lent much of the special equipment and many of the books on board. The Carnegie Institution acknowledges the assistance of these agencies in this regard. Besides continuing magnetic and atmospheric-electric investigations, they will attempt determinations of natural marine electric currents and an extensive schedule in biologic and physical oceanography. This work was begun during 1905 to 1908 on the chartered brigantine *Galilee*. With the completion in 1909 of the specially designed nonmagnetic yacht *Carnegie*, the work has been continued with greater efficiency.

CANADA

Alberta Offers Operations at Cost Price.—George Hoadley, minister of health of Alberta, in addressing a meeting at Calgary during child welfare week, stated that the traveling clinic which he had organized had visited 2,346 patients, examined 10,270 school children and visited 385 schools, and that of the 122 places desiring its services the clinic had visited forty-four. According to the *Journal of the Canadian Medical Association*, he emphasized the fact "that operations can be had at cost price which is much lower than is made by physicians throughout the province."

Hospital News.—The hospitals in Moncton City, New Brunswick, recently received a donation of $25,000 from the Canadian National Railways, a grant well deserved, the *Canadian Medical Association Journal* notes, as about 3,500 employees of the railway reside in that city.——Providence Hospital, Moose Jaw, Sask., has completed a $175,000 addition, four stories high and fireproof, thus making it one of the most modern hospitals in western Canada.——The Victoria Hospital, London, Ont., will build an addition which will increase its capacity to 210 beds, making it possible to vacate the old building.

Personal.—A complimentary dinner was tendered to Dr. George Harvey Agnew, Toronto, recently, on the occasion of his accepting a position with the Canadian Medical Association. He was presented with leather bags and silverware.——Dr. Boris Babkin has resigned from the chair of physiology at Dalhousie University Faculty of Medicine, Halifax.——Dr. James F. Hazelwood has resigned as director of the Toronto Public Health Laboratory to join the staff of the Ontario Workmen's Compensation Board.——Dr. Albert Grant Fleming has been appointed director of the department of public health and preventive medicine at McGill University Faculty of Medicine.

FOREIGN

Medical College Burned.—The buildings of Tokyo Medical College, Tokyo, Japan, were destroyed by fire in March, together with the Hakuai Hospital attached to the school and about twenty-three houses in the school compound. The damage was estimated at 800,000 yen. The college was founded in 1918.

Personal.—Madame Curie of Paris was awarded the honorary degree of doctor of laws by the University of Glasgow, June 20.——Sir Donald MacAlister, London, England, has been reelected president of the General Medical Council for another five year period.——Dr. Alfred Adler has returned to Vienna from the United States.

Centenary of Royal Free Hospital.—At the one hundredth annual meeting of the Royal Free Hospital, London, England, the governors announced their decision to celebrate the centenary of the hospital by raising £100,000 for the endowment of the dental clinic which is being provided by Mr. George Eastman of Rochester, N. Y., and an additional £210,000 for buildings which will include the Queen Mary wing, a new maternity department, an enlarged pathologic department and new kitchens.

British Medical Prizes.—The council of the British Medical Association is prepared to consider an award of the Middlemore Prize in 1929, to the author of the best essay on "The Clinical Study of the Vitrious Body, Its Swellings, Contractions, Opacities and Reactions to Toxic Invasion; with Special Reference to Glaucoma and Detached Retina." Essays must reach the medical secretary, B. M. A. House, Tavistock Square W. C. 1, by Dec. 31, 1928, signed with a motto accompanied by a sealed envelope marked with the motto and containing the name and address of the author. This prize is a check for £50 and an illuminated certificate. The council proposes to award in March, 1929, prizes of £25 each for the best essays by senior medical students on "Symptoms and Sequelae of Encephalitis Lethargica with Their Appropriate Treatment." Essays must not exceed 5,000 words and must include concise notes of three cases personally observed and must reach the above address not later than Jan. 12, 1929. One prize will be given to each of six groups of medical schools, all of which are in the British Empire. The council will award a prize in March, 1930, in a competition on the subject "Three Cases Illustrative of the Value of Antenatal Observation of Pregnant Women."

International Conference on Cancer.—Sir John Bland-Sutton will act as president of the International Conference on Cancer to be held at the Royal Society of Medicine and the College of Nursing, London, England, July 16-20. Among the speakers will be Prof. C. Regaud on the relative value of surgery and radiation in the treatment of cancer of various regions; Prof. G. Doderlein and Mr. Malcolm Donaldson; Prof. J. Ewing; Prof. F. Blumenthal; Prof. A. Borrel; Prof. Rhoda Erdmann; Prof. H. T. Deelmann; Prof. W. Blair Bell, and Drs. Francis Carter Wood and Joseph Muir. Sir Thomas Horder and Sir William Willcox will open the discussion on diagnostic methods; Dr. A. Leitch will address the pathologic section on occupational cancer; Prof. M. Greenwood will address a joint meeting of several sections on the geographic and racial prevalence of cancer; Sir George Buchanan will discuss public action in regard to cancer. One day will be devoted to the effects of radium and roentgen ray on the blood, vascular and lymphatic symptoms; Sir Berkeley Moynihan will address the surgical section on the early recognition and treatment of cancer of the stomach. The program includes many other speakers. Further information may be obtained from the chairman of the executive committee, Mr. Cecil Rowntree, 9, Upper Brook Street, London, W. 1.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 9, 1928.

The Tetra-Ethyl Lead Inquiry

The apprehensions that have been aroused in this country by the use of ethyl gasoline, which is imported from America, have been described in previous letters, and the appointment by the government of a committee of inquiry, at the first sitting of which American evidence was given as to the innocuousness of the gasoline. At the second sitting Dr. Myer Coplans, who had contributed a series of alarmist articles on the subject to the *Daily Mail*, gave evidence. Some of his points were as follows: 1. Regarding the handling of the components and oily surfaces of engines in which ethyl gasoline had been used. The proportion of lead present considerably exceeds the limits laid down for lead paint. No handling with bare hands of these oily deposits and contaminated parts should be permitted. 2. The exhaust gases from motor cars. The lead paint regulations forbid the application of lead paint in the form of a spray in the interior painting of buildings, yet the exhaust from a car using ethyl gasoline delivers lead into the atmosphere in the form of a fine spray. He examined the excreta of two men who had "serviced" cars using ethyl gasoline. He found lead in their overalls and a small amount in the excretions of one. He suggested that it was dangerous to send such overalls to the laundry without special notification. He also referred to the possibility of the contamination of water supplies, particularly shallow wells. Asked whether the amount of work he had personally done justified his alarmist statements, he replied that his work was borne out by more prolonged investigations in the United States, where a number of authorities considered that the unlimited use of ethyl gasoline constituted a public danger. The chairman of the committee said that if the *Daily Mail* had been really anxious to get at the bottom of the problem one would have thought that the American work which told in the opposite direction would have been mentioned. Dr. Coplans said that whatever might have been the case with the *Daily Mail* he had referred in his articles in medical journals to this work. He admitted that he had not controlled his results by examining men in garages where ethyl gasoline was not used. Asked whether, if a person remained for an hour in a traffic block among cars using ethyl gasoline he would run a risk of lead poisoning from exhaust gases, he replied that this might be the case in a narrow street with a great deal of traffic and in the case of a person repeatedly subject to such conditions. His interrogator, Sir Charles J. Martin, F.R.S., professor of experimental pathology in the University of London, thought that such a person would suffer from carbon monoxide poisoning far sooner than from lead. If it were granted that in an hour a man might breathe 0.5 mg. of lead, he would at the same time be absorbing 300 cc. of carbon monoxide, which would half saturate his blood. In reply to the suggestion that he had exaggerated the danger, Dr. Coplans denied such an intention but said that it was the ordinary practice in addressing the public to speak not with scientific exactness but in such a way that warnings would be regarded. The point was that lead was a cumulative poison, and the constant breathing of even one-third mg. per hour should not be permitted. Sir Charles said that one would have to stand in a traffic block for six hours, according to the figures supplied by Dr. Coplans, to get the 2 mg. which were said by one authority to be the industrial limit for a working day. Asked whether he knew of a single substantiated case in America, apart from those engaged in the manufacture of ethyl gasoline, he submitted a report of the International Labor Office of March last and also quoted from THE JOURNAL of Feb. 25, 1927, that the Standard Oil Company of New Jersey had settled the case of certain ethyl gas victims by paying $350,000. But another member of the committee (Professor Dixon) thought that the damages were paid for accidents in the manufacture.

The United States government evidently attaches considerable importance to the inquiry, for the committee has conferred with Surgeon General Cumming of the U. S. Public Health Service. A senior officer of that service, Dr. Leake, was present. The researches conducted by that service in America and others for the purpose of ascertaining the possibility of risk of lead poisoning from the use of ethyl gasoline were discussed.

The Organization of Discussions

In the *British Medical Journal* a correspondent, Dr. James Lindsay, discusses a defect of congresses which, though glaring, seems to receive little notice and to be accepted without demur, perhaps because it is thought irremediable. He refers to the "rushing through of the papers" of this otherwise successful conference on rheumatic diseases. Many important communications, preparation of which must have entailed laborious hours, had to get through in five minutes. This simply meant that the speakers had to deliver their addresses at such a rate that it was difficult for the audience to follow. Considerable sections of many contributions had to be cut down—a necessity without previous warning disconcerting to the speakers. In one instance the time which remained for a general discussion on the subjects of three hours' mutilated papers was only five minutes. Dr. Lindsay insists that discussion with its interchange of views and questionings should form an essential part of a "conference." His remedy is to have the contributions, which for the convenience of the press are already in print, made up in the form of paper-covered brochures. These could be distributed to those interested a few days before the sessions. The speakers could then be asked merely to deliver a précis of their observations and to show slides or charts. The latter would then possess a greater interest for the audience, who would have previously had an opportunity for digesting the subject matter. In a three-hour session this procedure would leave probably half the time for discussion. Dr. Lindsay, who has been a local secretary of a section at an annual meeting of the British Medical Association, suggests that if the next meeting should be conducted on these lines it would be an advantage to all concerned. The editorial comment on this important suggestion is somewhat cryptic: "If Dr. Lindsay had been a local general secretary of an annual meeting he would know that what he suggests is not quite so easy as it sounds." It might be added that the want of time for discussion is not the whole evil. Many speakers at congresses will not discuss what they have heard but seem to have come there not for this purpose but for the utterance of views with which they are already primed. The result is a multitude of various views but no discussion.

Another Martyr to Yellow Fever Research

It is not many months since Prof. Adrian Stokes succumbed to yellow fever, which he contracted while engaged in researches on the disease for the Rockefeller Commission in West Africa. The death in the same manner of another great man, Hideyo Noguchi, has only just been reported. Now the sad news comes that Dr. William A. Young, director of the Medical Research Institution of the Gold Coast, who was a colleague of Stokes and Noguchi, has succumbed within eight days of the death of the latter to what appears to be the same cause. Dr. Young was born in 1889 and was educated at St. Andrew's University, Dundee. He joined the West African medical service in May, 1913. During the war he served with the Cameroon Expeditionary Force. In 1920 he joined the staff of the Medical Research Institute in Nigeria, and was seconded three years later for service with the tsetse fly commission in that country.

In 1924 he was transferred to the Gold Coast and became head of the Medical Research Institute. A singularly able, patient and kindly man, he seemed destined to make a great name in the field of tropical medicine.

The Gradual Death of the Body

Sir Arthur Keith's lecture (THE JOURNAL, June 23, p. 2045) has given rise to a prolonged discussion in the lay press on life after death. One London paper, the *Daily News*, has arranged a series of articles on the subject from leading scientists and literary men. The general public also has responded by shoals of letters. One inquirer wants to know what happens to the soul in cases of resuscitation. To this Sir Arthur Keith replies that one of the most important discoveries of John Hunter was that the tissues do not die together, but gradually. He showed that an artery cut out of body two days after death was still alive. A century ago the bodies of hanged men were brought to the surgeons for dissection. This took place at Newgate, but it was the habit of Sir Arthur's predecessor of that day to take out the heart and bring it to the Royal College of Surgeons. In these cases the heart often continued to beat for six hours. "It is a curious fact that the brain cells are the first part of the body to die. If a man is immersed in water and has not taken a breath for fifteen minutes, it is practically useless to try artificial respiration. You may bring back the heart, but there is no response in the brain."

Typhoid Outbreak at Bath

Typhoid is a vanishing disease in this country, thanks to improved sanitation. But for the last two months there has been a succession of cases in one of the suburbs of Bath, famous since Roman times for its hot springs and a fashionable health resort since the eighteenth century. There have been twenty-six cases, of which two were fatal. There is no reason to suspect the main water supply of the city. The water of a series of springs of a high district situated just inside the city seems to have been polluted by a faulty drain.

A Fly in a Driver's Eye Causes a Fatal Motor Accident

While a man with his wife and daughter were driving in a motor car near Salisbury a fly, caught in the driver's eye, caused him to lose control. The car mounted a roadside bank and overturned, injuring the passengers. The man died shortly after admission to Salisbury Hospital, but his wife and daughter are reported to be progressing favorably.

PARIS

(From Our Regular Correspondent)

June 9, 1928.

The Vital Statistics for France in 1927

The ministry of labor has published the provisional report on the vital statistics of France for 1927. The total number of inhabitants for the ninety departments was, as of June 30, 1927, 40,960,000. The total number of living births for the year 1927 was 741,708. The deaths totaled 676,666, which gives a very low excess of births over deaths of 65,042. There were, during the year, 337,864 marriages solemnized and 18,487 divorces granted. There were 181 living births per 10,000 inhabitants, as compared with 188 in 1926; 165 deaths, as against 175 in 1926, and 165 marriages in place of 170. In comparison with 1926, the general results of 1927 may be summed up as follows: another drop of 8,000 in the total number of marriages; a diminution of 24,500 in the number of births, which is more than offset, in a sense, by the lowering, by 37,000 of the total number of deaths, so that the excess of births over deaths rose from 53,000 in 1926 to 65,000 in 1927. The increase in the excess of births over deaths corresponds approximately to the decline in infant mortality, which was exceptionally high in 1926. The first quarter of 1927 was marked by a high mortality: 222,000 deaths, as against 186,000 in 1926. In the three following quarters, however, the total number of deaths recorded was less than for the preceding year. Thus, the year 1927 is characterized by a slight increase of the excess of births over deaths, due to a marked reduction of the mortality; by a further decline in the number of marriages, which was nevertheless higher than in 1913, and by a diminution of divorces. On the whole, the distribution, by regions, of the excess of births over deaths did not change essentially, as compared with 1926. The departments in which the births are strongly in excess of the deaths are always those of the north and northeast. The regions in which are found the highest excesses of deaths over births are chiefly in the valley of the Garonne and along the northern border of the central mass of the population.

Ceremonies in Honor of Dr. Nicolle

At the théâtre municipal in Tunis, in the presence of a representative of the bey, the twenty-fifth anniversary of the beginning of Dr. Nicolle's directorship of the Institut Pasteur of Tunis was recently celebrated. Several speakers recalled the eminent services rendered to science by Dr. Nicolle: among others, his researches on undulant fever, kala-azar, Aleppo button, recurrent typhus fever, bilharziasis, ancylostomiasis, trachoma, and the prophylaxis and treatment of measles, scarlet fever and whooping cough, by means of serum of patients who have recovered. Dr. Nicolle, in thanking the speakers, gave credit to his collaborators, and, more particularly, to Dr. Conseil and to Drs. Jannot and Habib (the last two now deceased, the victims of their devotion to science), for a large part of the discoveries that have carried the fame of the Institut Pasteur to all parts of the world, as has been shown by numerous communications received from all the countries of Europe and the Americas, on the occasion of this commemorative celebration.

New Rulings of the Paris Department of Public Welfare

M. Mourier, director general of the Assistance publique in Paris, has addressed a circular letter to all the directors of hospital establishments, prohibiting formally the use, by the personnel, of "thou" and "thee" in place of the more formal "you" (*vous*). The habit of thou-theeing the patients became established many years ago, among all the personnel of hospitals, from the physicians down to the students and the nurses. The custom is said to have been introduced by the nuns, who, for many centuries, were the only nurses. They acted, no doubt, in a fraternal spirit and with purely charitable motives, in order that the patient might have the feeling that he was at home, surrounded by the members of his own immediate family. However, the patients finally began to complain of this undue familiarity, which, being adopted by the nurses and the ordinary subaltern employees, resulted in a lack of the usual forms of respect.

The general administration of the Assistance publique is having a subterranean passage constructed between the Hôpital de la Pitié and the Hospice de la Salpêtrière, in order to obviate the necessity of transferring patients from one institution to the other by way of the Boulevard de l'Hôpital.

The Campaign Against Yellow Fever in French West Africa

M. Lasnet, general inspector of the health service for the colonies, was sent, last September, to Africa to organize the campaign against yellow fever. In the fall of last year an epidemic cost the lives of several physicians. The rigorous measures which were proposed by M. Lasnet and which the governor general, Garde, strictly enforced caused the disappearance of all cases by December. At Dakar, the capital of French West Africa, Dr. Sorel carried out complete sanitation of the city. In order to afford an opportunity for the discus-

sion of all problems bearing on yellow fever and for organizing a common defense, a conference was held at Dakar, April 23-30, under the chairmanship of M. Lasnet, which was attended by delegates from all the Franco-British countries on the western coast of Africa, as far as Nigeria. Dr. Beeks, director of the American mission on yellow fever, at Lagos, the capital of Nigeria, attended the conference. A similar collaboration had been previously effected in the Congo region among the French, Belgian and German physicians, in connection with the international crusade against trypanosomiasis.

A Literary Prize Won by a Physician

Of the many competitive prizes offered each year, the *prix de la renaissance* has recently been awarded to two works by M. Luc Durtain: Hollywood dépassé and Quarantième étage, Luc Durtain being the pen-name of Dr. Nepven. The number of physicians who have abandoned their medical practice to devote themselves to literature is considerable, and some of them occupy a high place: Duhamal, Dorgelès, Voivenel, and others. This fact has awakened some surprise, and some regard it as evidence that medical studies and clinical training develop faculties of observation, which constitute the chief gift of a romancer.

The Progress Made in Collecting Funds for the Maison de la Chimie

On the occasion of the celebration of the centenary of Berthelot, a subscription was opened for the securing of funds for the erection of a chemistry building to be called the Maison de la chimie. The subscription is still open. Through the contributions of various countries and large financial corporations, the amount contributed thus far amounts to 21,000,000 francs, or $825,300.

AUSTRALIA

(From Our Regular Correspondent)

May 23, 1928.

Cancer Campaign in Queensland

A committee has been formed to organize the treatment of cancer in Queensland. A committee of direction which acts as a scientific advisory board has under its control a clinical and pathologic subcommittee, a finance subcommittee and a publicity subcommittee. The function of the publicity subcommittee will include the raising of funds and the control of advertisements of "cancer cures." Since the inception of the campaign eight months ago, £13,320 has been raised. Much more is expected.

Queensland is handicapped from the standpoint of cancer research in that it has no medical school in the Queensland University. Accordingly, the campaign committee is first concentrating its attention on the establishment of treatment centers. In the capital of the state, plans are being prepared for a building to act as a central cancer hospital. The plans for this building are based on a similar institution in Toulouse, France. The estimated cost is £28,000. Dr. E. Sanford Jackson is the chairman of the committee of direction.

Aerial Medical Service in Northwestern Queensland

The population of Queensland is 890,000, distributed over an area of 670,000 square miles. The bulk of the population, however, is in the southern and eastern districts, and in the northwest there is a large sparsely populated area which presents great difficulties as regards medical attention. The Australian Inland Mission Board, an activity of the Presbyterian Church in Australia, has inaugurated an aerial medical service with headquarters at Cloncurry. Dr. St. Vincent Welch has been appointed, and he is popularly known as the "flying doctor." The Queensland and Northern Territory Aerial Services Limited will provide, by arrangement, the airplane and the pilot. The airplane is equipped as an ambulance. The area of operation, in the first stage of the scheme, will be 300 square miles; although it is expected that calls will be received from outside this area. Communication throughout this area will be improved by establishing reliable, short distance transmitters (wireless telephony) at strategic points around a central station. Carrier pigeons will also be provided as an auxiliary and reserve means of communication. The functions of the "flying doctor" will include the rendering of first aid in accident and other urgent cases, attention to patients during transport, and, when desired, consultation with local physicians in isolated places. Periodic medical tours will be made to districts at present beyond the range of existing medical services. Although under the management of the Australian Inland Mission, the experiment is a truly national movement and the Queensland state government has approved and is watching local developments with interest. The commonwealth government has provided a practical benediction in the shape of a subsidy of half the running expenses of the airplane. The moving spirit in the scheme is the general superintendent of the mission, Rev. John Flynn. (An item on this service appeared in the London Letter, THE JOURNAL, July 7, p. 38.)

The Hospitals of Melbourne

The hospital problem of Melbourne has been engaging the serious attention of medical and state authorities for the last ten years. The Melbourne Hospital is situated almost in the heart of the city, and it has almost reached the limit of its potential growth. The area of land does not permit of much more building extension. The Alfred Hospital, 2 miles from the city, situated in a park area, is susceptible of almost unlimited expansion, as it occupies an area of 14 acres. The medical school and university is situated at the other end of Melbourne, more than a mile from the Melbourne Hospital, and 3½ miles from the Alfred Hospital. The practical solution of the problem lay in the utilization of an area of 20 acres adjacent to the medical school of the university. On this would be built a modern hospital, which would be the university training school and research department. This hospital would serve the northern and central districts of Melbourne, while the Alfred Hospital would serve the southern districts. The River Yarra would be the approximate dividing line. It would be economically possible to sell the land and buildings of the Melbourne Hospital, which are valued at a million pounds, and rebuild on the new site, establishing at the same time a casualty department in the center of the city. Unfortunately, the Victorian state ministry had other plans for the 20 acres of land known as the Pig Market site, and this scheme had to be abandoned. An alternative scheme is to make use of 5 acres of available land near the university for a small research hospital, where a certain proportion of the students could be trained and postgraduate facilities afforded. In the meantime the bed accommodation at the existing hospitals will be increased. A proposal has been made by Dr. W. J. Penfold, director of the Thomas Baker, Alice Baker and Eleanor Shaw Medical Research Institute at the Alfred Hospital, that the Melbourne and Alfred hospitals should amalgamate and form a Melbourne medical center on the site of the Alfred Hospital. One of the disadvantages of this scheme would be the distance of 3½ miles separating the proposed medical center from the existing medical school at the university.

"Patent Medicine" Legislation in Victoria

The proprietary medicine manufacturers in Victoria are organizing strenuous opposition to the enforcement of the Victorian state legislation requiring the disclosure of the contents of "patent" and proprietary medicines. Other provisions in the legislation empower the minister for health to prosecute persons who make "extravagant" (?) claims for specifics that are stated to cure such diseases as tuberculosis and cancer.

One of the reasons advanced by the proprietary medicine manufacturers for the postponement of the regulations was the necessity for uniformity of legislation in the other Australian states. The minister of health is afraid that control of proprietary medicines by the health department might be interpreted as approval of their use.

JAPAN

(From Our Regular Correspondent)

May 3, 1928.

New St. Barnas Hospital

A new hospital, named the St. Barnas Hospital, sister hospital to St. Luke's in Tokyo, has lately been opened in Osaka. It is being financed to a great extent by the American Episcopal Church. Dr. Teusler, director of St. Luke's, is to be director also of the new hospital. Dr. John D. Southworth will be vice director, and some Japanese physicians are to be added to the staff.

New Dean of the Medical Department, Kyushu Imperial University

The faculty meeting of the Medical Department of the Kyushu Imperial University was held, February 16, and Dr. S. Goto, chief of the hospital of the university, was elected dean of the department. Dr. N. Onodera, who formerly was dean, was appointed to take the position held by Dr. Goto.

Japanese Nurses from America

Two nurses, Misses W. Yamamoto and F. Tsukagoshi, were sent to the Rockefeller Institute by the Keio Medical College in April last year. They returned to Tokyo, May 11. The girls, considerably Americanized, had much to say of the great kindness of the staff, and of the perfect equipment. They spoke also of the hospital in the medical department of Yale University, where they had been since May of last year.

Antituberculosis Day

Tuberculosis is reported to be the cause of about 10 per cent of the total number of annual deaths in this country. Most of the victims are between 15 and 35 years of age. In Tokyo alone there occurred 11,689 deaths from the disease in 1927. According to the agreement arrived at in the officers' meeting of the Japan Antituberculosis Association, which was held in Tokyo, Antituberculosis Day was celebrated all over this country on April 27. Lectures were broadcast and motion pictures were shown in every city and village to instruct the public concerning the importance of the movement.

Drs. Nagayo and Hata to Europe

The invitations to the International Conference of the League of Nations concerning the Standardization of Arsphenamines, in Frankfurt, and to the International Serum Conference, in Copenhagen, were accepted by Dr. S. Hata, director of the Kitasato Institute, and by Dr. M. Nagayo, director of the government institute for infectious diseases. Their farewell dinner party was given in Tokyo, May 12, and was attended by more than seventy distinguished scholars and men of their profession. Dr. Hata left Tokyo, May 15, accompanied by Dr. Komatsu, one of the staff of his institute. Dr. Nagayo left on the 28th of the same month.

The Seventh Japanese Physiologic Conference

The experimental explanation of Dr. Wendensky's theory of decrementless conduction has made a great sensation among medical investigators in this country, especially since the results of a long study were published by Prof. Dr. G. Kato, professor in the Keio Medical College. This experimental report was given at the international hygiene conference held in Stockholm in 1926. Among his antagonists in this country is Prof. Dr. C. Ishikawa, professor in the Kyoto Imperial University, who last year made a protest against the Japanese Academy's awarding the academy prize to Dr. Kato. In the seventh Japanese Physiologic Conference, which was held in the Kyoto Imperial University for four days beginning April 4, there was hot arguments on this subject.

The Imperial Academy Prize Winners

April 14, the Imperial Academy of Japan distributed the prizes for this year in the Academy Hall in Ueno, Tokyo. The prize in commemoration of the emperor's wedding, the contribution of the Tokyo *Nichinnichi* and Osaka *Mainichi* (newspaper offices), was awarded to Prof. Dr. H. Kondo, professor in the pharmaceutic department of the Tokyo Imperial University.

The Japanese Red Cross Society

The thirty-sixth general meeting of the Japan Red Cross Society was held in the Constitution Commemoration Hall in Tokyo, May 5, and the empress was present.

Memorial Hospital with American Funds

In memory of the earthquake disaster of 1923, various services are held in Tokyo on September 1 every year, and this year the opening ceremony of the Doai Hospital is to be held on that day. The new hospital, which is now in course of construction at the former site of the Military Arsenal at Honjo Ward, Tokyo, has been planned with the idea of expending funds given by the American people, who contributed a large amount of money through the Red Cross Society of the United States of America. The chief of the hospital will be Dr. Miura, who has a strong desire to express his hearty thanks to the charitable people beyond the Pacific.

Dr. Kato's Visit to Egypt

Dr. Kato, professor in the Tohoku Imperial University, has been appointed to attend the centenary jubilee of Cairo University, which will be celebrated in December this year. After his mission to the session of the Tropical Medical Society has been discharged, he will go to Europe to stay for about eight months.

BERLIN

(From Our Regular Correspondent)

June 2, 1928.

Congress of Psychotherapy

Immediately following and supplementary to the Weisbaden Congress of Internal Medicine, the transactions of which were confined this year to the vegetative organs, the Congress of Psychotherapy was held, April 20-22. As the congress now includes all psychotherapeutic schools, its name has been extended to read: Allgemeiner ärztlicher Kongress für Psychotherapie. The congress dealt with three main topics: Adler's psychology of the individual, the character theory, and the relations between experimental psychology and psychotherapy.

Adler's psychology was considered in three comprehensive papers. Seif of Munich explained its general relations to psychotherapy, Wexberg of Vienna discussed constitutional organic inferiority in connection with results of internal medicine, and Künkel of Berlin dealt with the healing process in the theory and in the practice of psychology of the individual. Thus, a general view of the Adler theory and working tendencies, with its strong and its weak points, was presented. Schultz-Hencke of Berlin and Schilder of Vienna discussed, from the psychoanalytic standpoint, the weak points in Adler's theory. "Neurosis is a disturbance of interhuman social relations," said Seif in his paper on "Psychotherapy in Relation to Psychology of the Individual," "an offered excuse and pretended justification of the egocentric person lacking in courage that would enable him to face the tasks that life imposes on him (Ich und Du; Beruf; Mann und Frau), in order to protect his sensitive egoism against self-reproach and the criticisms of his entourage, and to shirk responsibility and compel special personal privileges." It is

the "secondary gain" of a neurosis that the patient makes use of his illness to gain certain things he desires; a neurosis, therefore, always involves, in a certain sense, relations with the patient's environment. It is thus absolutely essential that the neurotic person be "reeducated": that is to say, he must be taught to view life and his own person as they actually are, in order that, in this manner, it may be possible for him to find eventually his true place in the scheme of human existence. The specially planned conversations that the medical exponent of the psychology of the individual has with his patients hold the foregoing purpose clearly in view, and there is no reason why, if consistently carried out, they should not be sufficient in principle to effect a cure, were it not for the fact that, in addition to the above described secondary gain, also a primary gain made the neurosis more deep seated. For the recognition of the primary gain that the neurosis offers the methods of psychoanalysis must be employed; for only the "dynamic" observations of psychoanalysis will permit the physician to penetrate the realm of impulse and instinct, which is closely interwoven with the "subconscious" layers of the psyche, and lay bare the "advantages" that the neurosis presents for the economy of the instincts. In other words, the secondary gain is not difficult to discover, and what induces the patient to renounce it is nothing but a specially adapted form of instruction. The primary gain from a neurosis is, however, not open to ready inspection. Nothing will induce the patient to give it up other than the therapeutic application of a peculiar psychic situation staged by the physician (the so-called transmission or conveyance); which is a form of intervention that appeals essentially to the realms of the psyche which are inaccessible to rational instruction.

As Künkel explained, the patient must be induced by shock to depart from his false psychic attitude. "The complete change in his mental attitude amounts to a revolution. It is probably closely related to the conversion process; therefore this revolution is brought about only when the need has become so great that it is impossible to remain longer in the same state of mind." But all that is psychic pedagogics, for it is applied chiefly to the reason. It is characterized by its intervention in an area that, to be sure, comprises many factors exerting a determining influence on many aspects of life in both health and disease, but it does not reach the roots of a genuine neurosis. It is therefore necessary to study and apply the psychology of the individual. The system of Alfred Adler is suitable for the widespread transmission of certain profound, psychologic ideas of high pedagogic value. Schilder discussed in his paper the principles affecting organic inferiority. "The constitutional inferiority of an organ or of an organic system is doubtless utilized by the neurotic person to suit the purposes of his neurosis, or, in the spirit of equalization, an agreement is reached."

Short papers on various subtopics were presented by Weinmann of Munich (The Prophylaxis of Neuroses), Lenzberg of Frankfort-on-the-Main (Sexual Problems), Neuer of Vienna (General Topics), all from the standpoint of the psychology of the individual. Schwarz of Vienna discussed the question as to what criteria should be applied to determine whether a given mode of behavior or psychic manifestation is to be regarded as a natural performance of a truly vital kind or as a symptom of a condition. Speer of Lindau outlined in a few words the aim of the treatment given under the head of the psychology of the individual in its fictive peculiarities, and Kauders of Vienna sought to give shape and form to the advance tendencies in psychotherapy.

On the second day, the chief papers on "The Character Problem" were presented by two nonmedical investigators who are recognized authorities. Häberlin of Basel gave a systematic study of problematic character as the expression of the innermost antagonistic motives of human existence. Ludwig Klages treated the problem of impulse and will. He gave his hearers an impressive presentation of his views, together with many references, endeavoring to show that it is, in principle, impossible to trace the origin of the will to the sphere of the instinctive impulses with their life-controlling influence; that, on the contrary, the will is an inherent part of the mind of man and its sole function is to select and to check. In the same connection, Sommer, the chairman, gave, with the aid of charts showing physiologic reflex curves, some very noteworthy suggestions as to the dependence of manifestations of the will on events and the significance of such events for the understanding of human reactions. Allers of Vienna designated character as the "formal principle of general behavior" in a person, something like a "rule" or a "maxim," but not constituting an actual part of a human being, and drew various philosophical and psychologic consequences from his mode of thinking.

On the third day of the session, Kurt Lewin of Berlin gave a presentation of the most modern development of experimental psychology as applied to the will and the emotions. The well known adherent of "the psychology of form" explained the methods used by experimental psychology based, for the most part, on hypothetic occurrences, and how, in this manner, dynamic, causal-genetic conceptions were reached, leading up to a more detailed study of individual general reactions and taking account of the given situation in the broadest sense of the word. Psychology has developed to the point that it can begin to consider seriously the psychic laws that control, without exception, the manifestations of the higher psychic existence as well. In this manner, an approach to the real psychologic seat of life is opened up, through "natural" experimentation and the penetration of the deeper "strata" of the psyche. The extremely close relation of this really fruitful laboratory work to psychoanalytic thought processes, especially, will be manifest. J. H. Schultz of Berlin, in his paper on "The Psychogram in Relation to Character," criticized Allers' views and emphasized that Allers' conception of character, which is in agreement with the common use of the word, corresponded more to what he designated as personality. Giving a survey of the progress of experimental psychology during the past twenty years, he endeavored to show that a fruitful study of character as the expression of a formula determined by ultimate, absolutely characteristic, primary, genotypically conditioned and unchangeable peculiarities of reaction is possible through the application of precise psychologic methods, if one can get away from the false conception that a quality of character constitutes a definite fixed portion of a compound personality and will come to regard such quality as a form of reaction. This will lead the way to the development of a real typology.

Marriages

ROBERT KENNETH FELTER, Pearl River, N. Y., to Miss Jessica Pauline Mitchell of Byars, Okla., June 30.

JOHN EAGER HOWARD to Miss Lucy J. Iglehart, both of Baltimore, at Garrison Forest, Md., June 30.

JOHN WESLEY STINSON, Rochester, Minn., to Miss Bertha Eble Small, at Riverside, N. J., June 16.

FREDERICK A. MILLER, Hagerstown, Md., to Miss Eloise Steele Henry of Cambridge, June 30.

GORDON HASTINGS, El Dorado, Ark., to Miss Agatha Dodson of Minden, La., June 23.

SETH EDWIN BROWN, Evanston, Ill., to Miss Lydia Joy Lacey of Chicago, June 30.

SAMUEL BAUM, New York, to Miss Martha F. Echikson of Newark, N. J., July 3.

JOHN POLLARD BOWLER, Hanover, N. H., to Miss Madelaine Gile, May 26.

HARRY GABE to Miss Leona Kandel, both of New York, June 12.

Deaths

Isaac Williams Brewer, Bath, N. Y.; Medical Department of Columbian University, Washington, D. C., 1893; member of the Medical Society of the State of New York; at one time demonstrator of anatomy at his alma mater; formerly connected with the New York State Department of Health, and health officer of Watertown; served during the World War; superintendent of the Steuben County Tuberculosis Sanitarium, Bath, and formerly superintendent of the Tompkins County Tuberculosis Sanatorium, Langhannock Falls; aged 60; died, June 21, at Rochester, Minn., following an operation for renal lithiasis.

James A. Perrigo, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1870; M.R.C.S., England, 1871; at one time professor of surgery and gynecology, University of Bishop College Faculty of Medicine; formerly on the staff of the Western Hospital, now known as the Montreal General Hospital; aged 83; died, May 6.

James Thomas Wood, McMinnville, Ore.; Memphis (Tenn.) Hospital Medical College, 1887; member of the Oregon State Medical Society; on the staff of the McMinnville Hospital; aged 61; died, June 4, at the home of his daughter in Oregon City, of tuberculous peritonitis.

Ezra Edmund Brewer, Beloit, Kan.; University Medical College of Kansas City, 1892; member of the Kansas Medical Society; for thirty-two years member of the board of education; formerly on the staff of the Beloit Hospital; aged 68; died, June 15, of pernicious anemia.

Oscar M. Lanstrum ✠ Helena, Mont.; College of Physicians and Surgeons, Chicago, 1894; formerly member of the state legislature; on the staffs of the Florence Crittenton Home, St. John's and St. Peter's hospitals; aged 58; died suddenly, June 20, of cerebral hemorrhage.

Otto G. T. Kiliani, Bavaria, Germany; University of Halle, Germany, 1889; formerly professor of clinical surgery, Columbia University College of Physicians and Surgeons, New York; at one time on the staff of the German Hospital, New York; aged 64; died, June 1.

Charles Roy Caughey ✠ Kenosha, Wis.; Wisconsin Medical College, Milwaukee, 1907; past president of the Kenosha County Medical Society; aged 51; on the staff of the Kenosha Hospital, where he died, June 10, of chronic nephritis and arteriosclerosis.

Paulus A. Irving, Farmville, Va.; Medical College of Virginia, Richmond, 1879; member of the Medical Society of Virginia; formerly emeritus professor of pediatrics, University College of Medicine, Richmond; aged 70; died, June 11, of heart disease.

Leander Van Orden, San Francisco; Medical College of the Pacific, San Francisco, 1880; also a dentist; formerly professor of dental pathology and therapeutics, University of California; aged 70; died, March 29, at Alameda, Calif., of myocarditis.

Dean Orton Thompson ✠ Buffalo; University of Buffalo School of Medicine, 1899; at one time connected with U. S. Veterans' Bureau; formerly on the staff of the Buffalo Hospital of the Sisters of Charity; aged 50; died, May 27, of lobar pneumonia.

Russell Jay Coller, Vicksburg, Mich.; University of Michigan Medical School, Ann Arbor, 1920; member of the Michigan State Medical Society; aged 31; died, May 29, at the Bronson Methodist Hospital, Kalamazoo, of acute streptococcic septicemia.

William Howard Iszard, Camden, N. J.; Jefferson Medical College of Philadelphia, 1870; Civil War veteran; formerly member of the state legislature, county coroner and county physician; aged 86; died, June 19, of carcinoma of the gallbladder.

Richard W. Duke, Hueysville, Ky.; Kentucky University Medical Department, Louisville, 1903; formerly secretary of the Knott County Medical Society; aged 53; died, June 16, at a hospital in Pikeville, of a self-inflicted bullet wound.

Michael D. Welsh, Dawson, N. M.; Hospital College of Medicine, Medical Department of Central University of Kentucky, Louisville, 1900; member of the New Mexico Medical Society; aged 53; died, March 1, of bronchopneumonia.

John Duff Brown, Arlington, Texas; Vanderbilt University School of Medicine, Nashville, 1882; formerly county physician of Llano and Comanche counties; aged 71; died, June 9, as the result of a cerebral hemorrhage.

Henry N. Miller, Buffalo; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; member of the Medical Society of the State of New York; aged 70; died, May 31, of diabetes mellitus and valvular heart disease.

Louis Dienstag ✠ New York; University and Bellevue Hospital Medical College, New York, 1919; on the staff of the German Polyclinic Hospital; aged 31; died, June 18, at the Mount Sinai Hospital, of ulcerative colitis.

Henry G. Dawson, Cape Vincent, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1885; member of the Medical Society of the State of New York; aged 65; died, June 21, of heart disease.

George M. Kinner, North Mehoopany, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1895; member of the Medical Society of the State of Pennsylvania; aged 57; died, April 24, of pneumonia.

James R. Callaway ✠ Pauls Valley, Okla.; Fort Worth (Texas) School of Medicine, Medical Department of Fort Worth University, 1897; aged 73; died, March 17, of pneumonia, following influenza.

Fortunato Vigna, Paterson, N. J.; University of Turin, Italy, 1890; member of the Medical Society of New Jersey; aged 63; died, January 26, at the Barnert Hospital, of chronic myocarditis and nephritis.

Perley Hugh Mason, Peekskill, N. Y.; New York Homeopathic Medical College, New York, 1875; formerly county coroner; on the staff of the Peekskill Hospital; aged 75; died, June 20, of paralysis.

George Alston Tripp ✠ Worcester, Mass.; Medical School of Maine, Portland, 1896; on the staff of the Worcester City Hospital; aged 55; died, June 14, of chronic myocarditis and arteriosclerosis.

John R. Wheat, Richmond, Va.; Medical College of Virginia, Richmond, 1877; member of the Medical Society of Virginia; aged 78; died, June 4, at the Grace Hospital, of carcinoma of the sigmoid.

William Robert Henderson, New York; Columbia University College of Physicians and Surgeons, New York, 1891; aged 57; died, June 21, of chronic myocarditis and cerebral hemorrhage.

John Coakley McCarthy, Malden, Mass.; Harvard University Medical School, Boston, 1891; member of the Massachusetts Medical Society; aged 58; died, June 17, of cerebral hemorrhage.

Samuel Gaines Ethridge, Sparks, Ga., University of Georgia Medical Department, Augusta, 1889; member of the Medical Association of Georgia; aged 64; died, June 15, of paralysis.

Albert Lewis Scott, New York; Medical Department of Columbia College, New York, 1885; aged 73; died, June 15, at his home in White Plains, N. Y., of myocarditis and nephritis.

John C. Augustine, Batavia, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1876; formerly bank president; aged 77; died, June 8, at the Community Hospital, Geneva.

Albert R. Burton ✠ Princeton, Ind.; Medical College of Ohio, Cincinnati, 1882; formerly on the staff of the Methodist Episcopal Hospital; aged 69; died, June 21, of myocarditis.

Herbert H. Turner ✠ Christopher, Ill.; American Medical College, St. Louis, 1913; past president of the Franklin County Medical Society; aged 44; died, June 17, of heart disease.

Roland Walker Brayton, Boston; Harvard University Medical School, Boston, 1900; member of the Massachusetts Medical Society; aged 50; died, June 20, of brain tumor.

Colonel Manfred Johnson, Harvard, Ill.; University of Michigan Medical School, Ann Arbor, 1875; on the staff of the Peck's Hospital; aged 74; died, June 24, of nephritis.

David Ellsworth Furnall, St. Louis; Beaumont Hospital Medical College, St. Louis, 1900; aged 55; died, June 2, at St. John's Hospital, of *Streptococcus viridans* infection.

George De Witt Fay, Atlantic Highlands, N. J.; Hahnemann Medical College of Philadelphia, 1881; aged 69; died, March 7, of chronic nephritis, following heart disease.

Benjamin H. Henderson, Fayetteville, N. C.; Howard University School of Medicine, Washington, D. C., 1899; aged 63; died, January 5, of sarcoma of the parotid gland.

Lester James Gilroy ✠ Pawtucket, R. I.; Tufts College Medical School, Boston, 1920; aged 30; died, April 2, at the Jane Brown Hospital, Providence, of septicemia.

V 9
192

William Eugene Struthers, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1897; aged 61; died, April 20, of influenza and bronchopneumonia.

Preston Steele, Greenville, Pa.; Cleveland Medical College, Homeopathic, 1893; aged 57; died, May 16, at the Greenville Hospital, of nephritis and gallbladder disease.

Lou Andre Todd, Springdale, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1903; aged 63; died, April 19, at Elkhart, Ind., of influenza.

Frederick Croswell Gorham, Hudson, N. Y.; Albany Medical College, 1889; aged 71; died, June 8, at the Hudson City Hospital, of cerebral hemorrhage.

George Washington Samuel, Nashville, Tenn.; University of Nashville Medical Department, 1866; Confederate veteran; aged 89; died, May 13, of myocarditis.

Russell Joseph Erickson, Chicago; Loyola University School of Medicine, Chicago, 1926; aged 30; died, June 24, at Hot Lake, Ore., of lobar pneumonia.

Charles Sumner Collins, Houma, La.; Flint Medical College of New Orleans University, New Orleans, 1910; aged 49; died, May 5, of cerebral hemorrhage

Benjamin Frank Wentz ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1895; aged 57; died, March 16, of angina pectoris.

Daniel F. Linehan ✠ New York; Medical Department of the University of the City of New York, 1891; aged 58; died suddenly, June 19, of heart disease.

William Elwood Bundy, Hugoton, Kan. (licensed, Kansas, 1901); formerly county health officer and coroner; aged 76; died, June 10, of lobar pneumonia.

John Walker Morton, Fort Smith, Ark.; University of Nashville (Tenn.) Medical Department, 1874; aged 78; died, May 20, of sarcoma of the liver.

George Devey Farmer, Ancaster, Ont., Canada; Trinity Medical College, Toronto, 1891; served during the World War; aged 61; died suddenly, in May.

William Schlereth, Newark, N. J.; Medical Department of the University of the City of New York, 1891; aged 54; died, June 12, of myocarditis.

Taylor Davis Mangus, Moberly, Mo.; Marion-Sims College of Medicine, St. Louis, 1896; aged 55; died, April 12, of chronic interstitial nephritis.

Ernest Victor Dickey ✠ Dallas, Texas; Homeopathic Medical College of Missouri, St. Louis, 1900; aged 47; died, June 22, of angina pectoris.

William Anderson Copeland, Farmington, Mo.; Missouri Medical College, St. Louis, 1883; aged 69; died, January 30, of general arteriosclerosis.

Thomas H. Cox, Americus, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; aged 70; died, May 30, in a hospital at Atlanta.

A. Marion Dick ✠ Zenda, Kan.; Louisville and Hospital Medical College, Louisville, Ky., 1908; aged 56; died, April 19, of mitral stenosis.

A. J. Jamieson, Winona, Mo.; American Medical College, St. Louis, 1880; aged 79; died, January 26, of chronic cystitis and prostatitis.

Robert Martin Bugg, West Plains, Mo.; Louisville (Ky.) Medical College, 1891; aged 58; died, January 31, of chronic myocarditis.

Frank James, Deersville, Ohio; College of Physicians and Surgeons, Baltimore, 1886; aged 72; died, June 8, of cerebral hemorrhage.

Joseph H. Murphy ✠ Fairbank, Iowa; College of Physicians and Surgeons, Keokuk, 1882; aged 79; died, June 15, of senility.

Frank M. Barnes, Milan, Mo.; American Medical College, St. Louis, 1885; aged 71; died, April 15, of cerebral hemorrhage.

George S. Field, Gainesville, Texas; Louisville (Ky.) Medical College, 1875; aged 84; died, February 11, of paralysis.

William J. Dodson, Dossville, Miss. (licensed, Mississippi, 1882); aged 76; died, January 25, of organic heart disease.

John William Lacy ✠ Lisbon, Md.; College of Physicians and Surgeons, Baltimore, 1896; aged 60; died, January 21.

W. A. Clark, Durant, Okla. (registered, Oklahoma, under Act of 1908); aged 74; died, April 9, of pneumonia.

Olin W. Baird, Marquette, Kan. (licensed, Kansas, 1881); aged 76; died, May 8, of uremia.

Correspondence

TITLES OF MEDICAL PAPERS

To the Editor:—A medical library, large or small, which comprises medical journals and reprints, must be well indexed and catalogued. Else it will be of little value to its owner when, in the stress of many activities, he attempts to use it.

The title of a medical paper is important to the medical scientist and practitioner as well as to the professional medical librarian.

The present communication is a plea to authors of medical papers that they make the titles of their communications simple, short, and to the point.

At the outset, it must be emphasized that the author of a paper that bears a poorly worded title is, in the end, the greatest loser. His work may be excellent, original and of scientific and clinical value. If the title is wrong, the paper is in danger of being disregarded and forgotten. Neither scientist nor clinician will be able to locate the paper, much as he may desire to peruse it at the moment.

The following examples of poor titles were culled during some recent "browsing" in my own small collection of medical journals and reprints. Such, and similar, titles must be the despair of the conscientious, regular, medical librarian, if he or she is capable of any emotion at all.

From the nature of my work, these "horrible examples" deal with bone and joint lesions. Perhaps such things do not occur in other fields. I do not know.

The substance of the papers following the quoted titles is excellent and the papers themselves are worthy of a better fate than the oblivion which is theirs on account of vague and ambiguous superscriptions.

The titles quoted below appeared in recent years in representatives medical journals and are but examples of many similar ones, in my specialty, at least:

(*a*) *Certain Dyskinesias Irremediable by Operation or Prosthetic Measures*

A long and ambiguous title. The paper is an admirable one relating to the interesting borderland between neurology and orthopedic surgery.

(*b*) *A Case of Obscure Bone Disease and Conclusions*

A vague title. The paper really is a nicely worked up case of bone cyst and well reported.

(*c*) *Some Rare Forms of Bone Lesions*

A few interesting, rare cases of standard bone diseases lie buried under this title and are difficult to resurrect.

(*d*) *Some Obscure Bone Lesions*

One of the sins to which the author of the present article hereby confesses. We are all guilty in greater or lesser degree.

(*e*) *The Effect of Pressure on Articular Surfaces in Pyogenic and Tuberculosis Arthritides and Its Bearing on Treatment*

Too long and difficult to file. It is an important paper full of good things.

(*f*) *Mesial Triprism*

Buried, as it were, with this title as a headstone, there is described quite a neat and simple method of splinting in some lesions of the foot. Any one interested in foot supports will never think of looking under such a title.

(*g*) *Compressive Trauma as an Entity*

This is a worth-while experimental study of the effect of trauma on tissues. It is good research work. It seems lost.

Hard and fast rules cannot be laid down, but a title should be short and not long, clear and not ambiguous. When possible, a statement of the pathologic process and anatomic region

involved is of value in the title. Titles should be concise and accurate. Observance of these quite obvious suggestions will be of advantage to the reader, and still more to the advantage of the author, who will thereby often rescue his work from early and undeserved oblivion.

EMIL S. GEIST, M.D., Minneapolis.
Associate Professor of Orthopedic Surgery,
University of Minnesota Medical School.

DOMICILIARY MEDICINE

To the Editor:—In THE JOURNAL, June 9, Drs. Kelly and Phinizy report the inauguration at University of Georgia Medical Department of what they call domiciliary medicine in fourth year medical teaching.

The authors, and perhaps other readers of THE JOURNAL, may be interested to learn that at the Columbia University College of Physicians and Surgeons we included similar work in the clinical teaching of fourth year students for a period of about ten years, beginning in October, 1911. This feature of clinical teaching was discontinued in 1920, when Dean S. W. Lambert resigned. I made a somewhat detailed report of the work in the *New York Medical Journal*, Nov. 13, 1915, under the title "Clinical Teaching."

MAXIMILIAN SCHULMAN, M.D., New York.
Assistant Professor of Clinical Medicine,
Columbia University College of Physicians and Surgeons.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TESTS FOR ACIDOSIS, ALKALOSIS AND KIDNEY FUNCTION

To the Editor:—Will you kindly inform me what methods can be used to indicate degree of acidosis, and also degree of kidney function, in the absence of blood tests? We have in this hospital neither the apparatus nor the chemicals for blood work, such as is done at home. Is there any better simple test for acidosis than that published in THE JOURNAL, Oct. 30, 1926? Do you know of a similar test for alkalosis? The only kidney function test we have used is the phenolsulphonphthalein, but often that does not give enough information.

W. G. JONES, M.D., Mirag, S. M. C., India.

ANSWER.—There are, of course, many tests for the determination of the degree of acidosis in varying conditions, the best of which is probably the Van Slyke method for the carbon dioxide combining power of the plasma. However, this test is not applicable to the conditions under which our correspondent works. In the absence of blood tests there is a simple test for estimating the depletion of the alkali reserve of the system as a whole, by determining how much alkali may be administered in the form of sodium bicarbonate before the urine becomes alkaline. When the alkali reserve is at or near the normal value, as little as 5 Gm. daily will render the urine alkaline, while as much as 125 Gm. of the bicarbonate daily may be necessary when the alkali reserve is seriously depleted. Macleod (*J. Lab. & Clin. Med.* **4**:315, 1919) states that "for practical purposes it is no doubt the best test of acidosis at present available in routine clinical work." The method of Breed, which is the one mentioned by our correspondent, is a simple and reliable test for estimating acidosis and gives figures comparing favorably with the Van Slyke method.

As regards the tests for renal function, the phenolsulphonphthalein test usually yields quite reliable results, although in some cases it may not reveal disturbed renal function. Another test for renal function is the urea concentration test of McLean and de Wesselow, which is performed as follows: The patient is instructed to empty his bladder completely and is then given by mouth 15 Gm. of urea dissolved in 100 cc. of water flavored with tincture of orange. The patient then passes urine at the end of one and two hours, both specimens being measured and the urea estimated by the hypobromite method. The authors conclude that a urea concentration of 2 per cent means a fairly efficient kidney and less than 1 per cent a diseased kidney; the lower the concentration, the more serious the kidney injury. A further test of renal function is the Mosenthal method of giving a definite diet, collecting the urine at intervals of two hours during the day and one specimen from 8 p. m. to 8 a. m., and then determining the specific gravity of these specimens. The maximum specific gravity should be normally from 1.018 to 1.020, and there should be a variation of 9 points between the high and low specific gravities of the specimens. If the renal function is disturbed, there is a marked tendency to fix the specific gravity at a more or less definite point, so that no such variation as 9 points will be noted. The details of the diet to be used can be given in this place.

As a simple test for alkalosis one may use the reaction of the urine. If the urine is consistently alkaline from the presence of fixed alkalis, this may be taken as evidence of systemic alkalinity beyond the normal degree, as the urine is ordinarily acid except at the height of digestion, when the so-called alkaline tide of the urine is observed.

PERMANENCE OF BLOOD TYPE

To the Editor:—In THE JOURNAL, May 12, page 1585, your reply regarding permanence of blood type is in accord, I believe, with the statements of most authors. Is it not, however, a fact that an individual may be a satisfactory donor at one time, as judged both by agglutination tests in vitro and the transfusion reaction or absence of such, and at a later date show definite to marked agglutination or hemolysis with the blood of the same patient? Would it not be obviously unsafe to use such a donor for a second transfusion, even though there was no reaction of an unfavorable type following the first transfusion? Finally, is not the direct agglutination and hemolysis test sufficient in itself and more dependable than the test of group, in determining the compatibility of a given blood for transfusion? Please omit name.

M.D., North Carolina.

To the Editor:—In a recent issue of THE JOURNAL you make the statement that the blood group of any given person does not change. I have found four authorities in my library who say that the recipient may change his group after a transfusion and every one emphasizes the necessity of matching before every transfusion. Can my books all be wrong?

W. H. PAIGE, M.D., Brownwood, Texas.

ANSWER.—The precaution of making both the grouping test and the compatibility test for the blood of the recipient and of the donor is advisable, since instances are on record in which weak agglutination of incompatible bloods was overlooked. If the recipient has developed agglutinins or hemolysins for the blood of the first donor, tests might be made with blood from other persons of the same blood group. If the recipient's blood agglutinates or lakes many bloods of its own group, no individual difference appears to be indicated and the first donor would be as good a choice as any, provided no mistake was made in the first grouping.

The possibility of temporary changes in the blood of persons who have received transfusions must be considered. Dilution with blood from a so-called universal donor (group O) which contains iso-agglutinins for both A and B cells, and many other conditions dependent on reactions to the introduction of individually foreign cells and fluid, might obscure the usual iso-agglutinative reactions of the recipient's blood which to the best of our knowledge are constitutionally stable. Repeated tests both for grouping and for compatibility might aid in the study of these modifying conditions and yet not alter the belief that the blood group of a given person does not change.

TESTICULAR EXTRACTS FOR FEMALE CHARACTERISTICS

To the Editor:—I wish your opinion as to the efficiency of testicular extract in a young man with female characteristics. He is 18 years of age, there is no axillary hair, the breasts are large, and the pubic hair is female in character. The skin of the face and the body is hairless.

J. E. KING, M.D., Girard, Ohio.

ANSWER.—The question does not state whether the testes of the patient have descended or are atrophied. It has been reported that, if a boy under 10 years of age is castrated, a defective development of the reproductive organs ensues. Under these circumstances, no beard develops except in old age, when one resembling that occurring in old women may develop. The hair on the rest of the body is defective. The trunk, axilla and limbs are quite devoid of hair. There is an apparent hypertrophy of the breasts, which is not due to increase of glandular tissues but results from excessive deposit of fat. There is some psychic disturbance, and a certain degree of indolence is said to be characteristic. If we concede this description we would again be compelled to ask if this boy had not been cas-

trated or suffered atrophy of the testes. How could we be assured that the condition which the patient presents was due to a testicular deficiency?

Endocrinologists also say that, if hypopituitarism occurs during adolescence, infantilism may result, characterized by undeveloped sexual growth, lack of hair, or a tendency to that distribution of the hair which occurs in the opposite sex. These persons also tend to become fat and helpless.

In boys, one frequently observes increase in the size of the breasts and the general contour is feminine. Perhaps it is possible that the glandular dystrophy, if such it be, is due to hypopituitarism in this case.

Since Brown-Séquard in 1889 startled the world with his proposal to rejuvenate the elders by injection of testicular extract, other attempts have been made in the same direction and transplantations have also been tried. Up to the present all the experiments have resulted in dismal failure.

The endocrinologist cannot feast until the physiologist has reaped the harvest.

USE OF VACCINES IN GONORRHEA

To the Editor:—What is the present status of vaccines in the treatment of gonorrhea? Assuming that beneficial results may be obtained from the use of pure or mixed gonococcus vaccine, are these results due to protein reaction or to antibody formation? Kindly omit my name.

M.D., California.

ANSWER.—Vaccines are used to some extent in the treatment of gonorrhea and other gonococcus infections, especially in chronic and complicated cases, and apparently at least beneficial results may be secured. Such results are probably due to nonspecific reactions as well as to stimulation of the formation of specific antibodies. The specific effect would seem to be the more important, especially as marked general protein reactions are not produced by the doses of vaccine usually injected.

CLAY FACIAL TREATMENTS—FORDYCE DISEASE

To the Editor:—I wish you would give me some authentic information regarding facial treatments. Are they injurious to the skin or to the body in general? I have a patient who is positive she has suffered permanent effects from a clay facial treatment. She states that the lining of her mouth has felt peculiar ever since. On examination, the mucous membrane suggests Fordyce's disease. Is there any treatment for the latter?

F. R. PERFECT, M.D., Lykens, Pa.

ANSWER.—Facial treatments are not injurious to the person with a normal skin, provided the clay preparation is not medicated with an irritating agent. When acne or some other pustular skin disease is present, massage and manipulation may aggravate the condition by producing a folliculitis. It is hardly conceivable that a clay facial treatment could affect the lining of the mouth. Fordyce's disease of the mucous membrane is a benign disorder that does not require treatment.

IRRITATION FROM LACQUERS USED IN INDUSTRY

To the Editor:—About a month ago a man was referred to me with the following symptoms: Three days before he had received a scratch on the left thumb. The next day the arm and hand became swollen. That night he was chilly. He thinks he had some fever. No improvement occurred on the subsequent two days. He came to me with a diagnosis of probable blood poisoning. Examination revealed the left hand rather tense, the arm swollen a little, pain in the muscles rather marked, some axillary adenitis, and absence of lymphangitis. The temperature was normal, as was the pulse. The white cell count was 12,000. Blood culture and the Wassermann reaction were negative. Under treatment the arm improved, until he was able to return to work four days later. After two days' work the symptoms returned in an exaggerated fashion. I put him in the hospital, elevated the arm, and applied hot magnesium sulphate solutions to it. The next day there was an area of definite fluctuation in the hand on the dorsal surface just mesial to the base of the thumb. This was incised with negative results. After about a week he improved sufficiently to go home. Several days subsequently he returned to work. Today he came into my office with the right arm in a similar condition. It was swollen, cramps were in the muscles, the joints were stiff and there was a small abrasion on the hand. The man works in an establishment where certain lacquers are used. It seems that the particular type of work he does requires that his hands be in these materials most of the time. They are Egyptian lacquer and thinner, Mimax lacquer and thinner, Merco lacquer and thinner, also benzine, gasoline and turpentine. He states that several men are in a similar condition and that one was reported to have had a hand amputated, presumably from the effects of having worked in these liquids. Can you tell me what the probable cause of such a condition might be? Is there any chemical in these liquids that would bring about such a condition as described? It is rather likely that there will be a medicolegal phase to the case. Kindly omit my name.

M.D., North Carolina.

ANSWER.—Names such as Egyptian, Mimax and Merco designate specific brands of lacquers and thinners and do not represent types of these substances. A noninfectious condition similar to the one described has recently been observed in a paint worker and traced to arsenic as an impurity. However, in addition to the involvement of the hands, this patient presented other evidences of arsenic poisoning.

If pigmented materials, such as colored varnishes and lacquers, are included in the exposure, arsenic is a possible cause of the condition. However, patients should exhibit some of the following signs of arsenic involvement: loss of nails and hair; edema of the eyelids, ears and skin; bronzing of the skin; anesthetic skin areas; gastro-intestinal changes; muscular atrophy, and muscular incoordination. Arsenic in quantities above normal traces should be demonstrated in the hair, blood or urine of some patients. The work materials suspected should be examined for harmful quantities of arsenic.

In the event that arsenic may be ruled out, significance is to be attached to the fact that practically all paint, lacquer and varnish materials and solvents are in themselves skin irritants. This is especially true of steam distilled wood turpentine. These substances not only directly irritate the skin of a considerable number of exposed workmen but indirectly, by lowering the skin resistance, pave the way for secondary infection with pyogenic bacteria and with fungi. Trivial abrasions and cuts, such as mentioned by our correspondent, are frequently followed by severe infection.

In the present instance, if arsenic may be ruled out as the cause, investigation should next be made as to the use of "wood turpentines." If both of these extra hazardous substances may be exculpated, the continued use of the customary solvents and thinners common to lacquers, paints and varnishes, including benzine, benzene, solvent naphtha and oil of turpentine, is to be regarded as the likely source of the conditions described.

ICE CREAM FOR DIABETIC PATIENTS

To the Editor:—I have been asked to submit a formula for ice cream suitable for patients with diabetes. I suppose this would mean an ice cream with little or no sugar, or else possibly the use of saccharin. The use of saccharin is unlawful in this state (Massachusetts).

H. F. JUDKINS, Springfield, Mass.

ANSWER.—It is a surprising fact that patients with diabetes tolerate a small portion, 50 Gm., of ice cream extraordinarily well. It is a great convenience and often protects them from embarrassment. Instead of 100 Gm. of orange, containing approximately 10 Gm. of carbohydrate, Joslin allows 50 Gm. of ice cream of which typical values, according to E. M. Bailey of the Connecticut Agricultural Experiment Station, are protein, 3.8 per cent; fat, 12.6 per cent; carbohydrate, 19.6 per cent; or, for the 50 Gm. portion, approximately protein, 2 Gm.; fat, 6 Gm.; carbohydrate, 10 Gm. Sherbets and water ice work havoc, which leads one to assign to the presence of fat in the ice cream its favorable action.

The best recipe for ice cream Miss Dike and Miss Kenseth could find for Joslin's book in preinsulin days was:

Food	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Cream, 40 per cent.....	90 cc.	3	36	3	348
Water	10 cc.				
Egg (1)	50 Gm.	6	6		78
Saccharin (to sweeten)....					
Flavoring (to taste).....					
		9	42	3	426

Make a soft custard of the egg, 50 cc. of the cream, and the water. Whip the remaining 40 cc. of cream and fold into custard. The saccharin may be added to the egg. The flavoring should be added last.

TREATMENT OF PAROXYSMAL TACHYCARDIA

To the Editor:—Can you suggest any drugs that may be used in treating a paroxysmal tachycardia in a woman 50 years of age? What is the usual procedure in using quinidine? Please omit name.

M.D., Atlantic Highlands, N. J.

ANSWER.—A diagnosis of paroxysmal tachycardia of auricular origin at the age of 50 should be reviewed carefully, unless there is a definite history of the attack beginning earlier in life. Attacks beginning in later life should always be suspected of being of ventricular origin, and usually accompany grave coronary injury and an infarcted myocardium.

As ordinarily used, the term paroxysmal tachycardia refers to attacks of the type whose origin is in the auricle. Treatment should be directed toward whatever factors precipitate the attack, if these can be determined. It may be that some nervous factor or indigestion or gas institutes the attack. Fatigue may be an element. The interchangeability of paroxysmal tachycardia and migraine should be considered. Digital pressure on the vagus as it descends in the carotid sheath will stop instantly many of the attacks. The patient may be taught to do this. The attack may also be terminated by inducing nausea, by

pharyngeal stimulation, by pressure on the eyeball, by swallowing a large capsule or bolus, or by assuming some unusual position.

Drugs are of little value. Ipecac in emetic doses was recommended by Stokes and is of value. The use of quinidine is of doubtful propriety. There are cases in which its use might be justified, but it is too depressing a drug to be used constantly. It is better not to use it.

"MAN-OF-WAR" AND EFFECTS ON MAN

To the Editor:—The ocean at Miami Beach, Fla., particularly in the winter months, contains a form of marine life known locally as a man-of-war. It varies in size from a walnut to a well inflated toy balloon. The body portion is transparent and collapses if punctured; it has a faint blue color, and projecting from it are a series of short flagella-like protrusions and one long protrusion from a few inches to several feet in length, depending on the size of the body, and about the thickness of a piece of string. When a bather and a man-of-war come in contact, the bather experiences a stinging sensation at the point or points of contact. Some patients develop in ten or fifteen minutes symptoms of absorption—severe abdominal cramplike pain. They will lie on the floor doubled up and groan with pain; and despite their activity the pulse is usually slow, about 60 a minute. I should like to know the scientific name of this marine form, the nature of the substance producing the symptoms, and the treatment. Please omit name. M.D., Florida.

ANSWER.—From the description given, the scientific name of the marine form concerned is *Physalia pelagica;* possibly *Physalia arethusa.* These forms belong to the great group of Coelenterates, class of Siphonophores. They are free floating colonial forms consisting of several kinds of differentiated individuals supported by a float. These individuals or zooids each have distinct functions as, for instance reproduction, nutrition or protection. Physalia, or Portuguese man-of-war, is particularly common in the Gulf Stream; its large float serves as a sail by which the animal is transported by the wind. Physalia is well provided with flagella-like protrusions bearing immovable batteries of menatocysts. These little organs consist chiefly of a capsule secreting a poisonous fluid, which is discharged by a projecting mechanism. This serves primarily for paralyzing smaller marine forms by which the Siphonophores feed. Discharge, however, occurs whenever the tubercles come in contact with other foreign objects. The burning and cramplike pain experienced is undoubtedly due to the absorption of the poisonous substance. The effect, however, seems to be only transitory.

STERILIZATION OF VAGINAL ENDPIECE IN DIATHERMIC APPARATUS

To the Editor:—How shall I sterilize a vaginal endpiece consisting of metal and hard rubber in a diathermic apparatus? Sterilization must take the shortest possible time. Please omit name. M.D., New York.

ANSWER.—Immediately after the instrument is used, the mucus and pus are washed off with cold water. The reason for this is that mucus is soluble in water. If heat or mercuric chloride is used, the mucus coagulates and sticks to the instrument.

Next, the instrument is thoroughly washed with soap and hot water. After this is completed, it is put in compound solution of cresol and allowed to remain there ten or fifteen minutes.

Before the instrument is used, it should be thoroughly dried with clean gauze. The fact that it is used as a thermophore guarantees a certain amount of heat, which has a sterilizing quality.

THE "OLD RAL"

To the Editor:—I see in THE JOURNAL, June 16, a question from Dr. R. B. McVay, of Kansas City, requesting information concerning the origin of the name "Old Ral."

Hot Springs is a very old resort, at least for this country, and long before a railroad was built into this place those seeking treatment here had to come by coach from Malvern, twenty miles away. It was customary in those early days to question closely, and discuss freely, the ailments of each passenger, as the coach proceeded toward the Springs. On the particular trip about which I am writing, the chief interrogator found that one passenger was rheumatic, another had dyspepsia, another had chronic malaria, another had disease of the liver, admittedly from strong drink, and so on, until all had had the opportunity of making a report of his ailment.

One gentleman, who possessed a high pitched voice and was near the last to be questioned, said, "I am sorry to say, gentlemen, I have a case of neuralgia."

Finally a deep voiced, glum looking individual was asked to inform the coach occupants of his ailment; as he did not look to be very ill, they were all quite anxious to get his report. After repeated efforts at prying into his affairs proved unsuccessful, he finally replied "by G—, I have 'Old Ralgia.'" Hence the origin of "Old Ral."

HOWARD P. COLLINGS, M.D., Hot Springs, Ark.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

MISSOURI: St. Louis, July 17-19. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

SOUTH DAKOTA: Mitchell, July 17. Sec., Dr. H. R. Kenaston, Bonesteel.

WASHINGTON: Seattle, July 16. Dir., Reg. Bd., Mr. Charles Maybury, Olympia.

Idaho April Examination

Hon. Fred E. Lukens, Commissioner of Law Enforcement of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, April 3-4, 1928. The examination covered 13 subjects and included 130 questions. An average of 75 per cent was required to pass. Of the 4 candidates examined, 3 passed and 1 failed. Four physicians were licensed by reciprocity. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Rush Medical College	(1926)	86
State University of Iowa College of Med...	(1926) 78, (1927)	81

FAILED	Year Grad.	Per Cent
Hospital College of Medicine, Kentucky	(1904)	70

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1898) Utah, (1912)	Nebraska
University of Illinois College of Medicine	(1904)	Washington
Woman's Medical College of Pennsylvania	(1912)	Oregon

Maine March Examination

Dr. Adam P. Leighton, secretary of the Maine State Board of Registration, reports the written examination held at Portland, March 13-14, 1928. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Eleven candidates were examined, all of whom passed. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Yale University School of Medicine	(1927)	82
Rush Medical College	(1927)	85.6
Harvard University Medical School	(1905)	75.8
Tufts College Medical School	(1904) 75.1, (1927)	82, 82
Jefferson Medical College of Philadelphia	(1926)	88
Laval University Faculty of Medicine	(1925)	76
McGill University Faculty of Medicine	(1927) 83,	85, 85

Massachusetts March Examination

Dr. Frank M. Vaughan, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, March 13-15, 1928. The examination covered 13 subjects and included 70 questions. An average of 75 per cent was required to pass. Of the 79 candidates examined, 39 passed, including 6 osteopaths, and 40 failed, including 19 osteopaths. The following colleges were represented:

PASSED	Year Grad.	Per Cent
State University of Iowa College of Medicine	(1925)	83.5
Johns Hopkins University School of Med...	(1905) 82.7, (1917)	83.9
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1910)	78.4
College of Physicians and Surgeons, Boston	(1926)	77.2
Boston University School of Medicine	(1925) 80, (1926) (1927) 75, 77, 81.4, 83.4, 83.7	76.2,
Harvard Univ. Med. School...	(1921) 85, (1925) 84.6, (1928)	77.7
Middlesex College of Med. and Surg.	(1923) 76.3, (1927)	75.7
Tufts College Medical School	(1927) 75.4, 76.9,	78, 79.5
St. Louis University School of Medicine	(1924)	76.1
Western Reserve University School of Medicine	(1924)	83.2
University of Pennsylvania School of Medicine	(1921)	84.6
Woman's Medical College of Pennsylvania	(1921)	78
University of Vermont School of Medicine	(1924)	77.5
Dalhousie University Faculty of Medicine	(1922)	77.2
University of Toronto Faculty of Medicine	(1926)	86
University of Western Ontario Medical School	(1916)	75.6
McGill University Faculty of Medicine	(1927)	81.5
University of Montreal Faculty of Medicine	(1927) 75,	75, 76.2
Osteopaths	75, 75, 75, 76,	76.1, 76.7

FAILED	Year Grad.	Per Cent
Chicago Medical School	(1926)	65.2
Boston University School of Medicine	(1927)	73.1
College of Physicians and Surgeons, Boston	(1927) 62.4,	72.1
Middlesex College of Medicine and Surgery	(1921) (1923) 52.8, 73.1, (1926) 53.2, 59.2, 65.3	67.6,

Kansas City Univ. of Phys. and Surgs....(1926) 63.7, (1927) 37, 43.9
St. Louis College of Physicians and Surgeons.....(1923) 48
University of Montreal Faculty of Medicine.....(1921) 60.8, (1922) 56.9, 68.7, (1925) 63
Royal University, Naples, Italy.....(1923)* 64.6
University of Warsaw, Poland.....(1926) †
University of Coimbra, Portugal.....(1927) 72.5
Osteopaths.....43.2 53, 57.2, 59.9, 60.5, 61, 63.2, 63.4, 64.5, 67.2, 67.9, 68, 69.3, 70.3, 70.9, 70.9, 71.3, 72.1, 73.5

* Verification of graduation in process.
† Detected cribbing and dismissed from examination.

Book Notices

INNERE SEKRETION; IHRE PHYSIOLOGIE, PATHOLOGIE UND KLINIK. Von Dr. Julius Bauer. Paper. Price, 36 marks. Pp. 479, with 56 illustrations. Berlin: Julius Springer, 1927.

Another monograph; but the author intends this as something different from the usual crop, and he has in part succeeded. In the preface Dr. Bauer admits the present plethora of monographs on internal secretion, but despite this the sorry clinical spectacle of easy reference to endocrinology of almost everything unknown or unexplained in clinical symptoms is still common. As Dr. Bauer remarks, when disease of one endocrine organ does not seem to suffice to explain the phenomenon, we pass easily to the pluriglandular explanation or to direct disturbances due to lack of balance between the different endocrine glands. The author's point of view is made clear by the following quotation from the preface: "If we are to arrive at the true understanding not only of the interrelations of the endocrine organs but of the relation of the endocrine organs to normal and pathologic processes, we must study these organs not alone from the point of view of experimental physiology and pathologic anatomy but also from the point of view of more general biologic correlations. We must consider their relation to the individual personality, to the individual constitution and to the general type. Many disturbances of the internal secretion are not, as most investigators seem to assume today, the cause of pathologic processes which we observe in patients, but they are themselves consequences of wider disturbances of a general type; that is, disturbances that may be called primary anomalies of the constitution. Without thorough understanding of 'constitution pathologie' and the facts and theory of heredity, the real understanding of endocrinology is impossible." This point of view is maintained throughout the monograph and particularly in the last chapter, on the relation of internal secretion to the pathology of the organism as a whole, as well as to the pathology of special organs, and in the final supplement, on the relation of the internal secretions to the constitutional habits of man.

The monograph is to be regarded as a serious contribution to medical science. There is undoubtedly an element of truth in the author's point of view, but at present one may question whether the introduction of such concepts as genotype personality and heredity without further analysis of the mechanisms of these processes does not contribute more fog than clarity to an already difficult field. The author shows familiarity with the experimental and the clinical literature and in most cases good critical judgment in the evaluation of this literature. For example, he says (page 183) "Organotherapy by mouth has so far proved successful only in the case of the thyroid gland." All critical practitioners will agree with that statement. One is therefore greatly disappointed on turning a few pages to find that the author apparently accepts as proved the suppositions that by diathermy one can increase the activity of such glands as the ovaries, testes and hypophysis; that with increased protein one can increase the secretion of the thyroid; that by nonspecific protein therapy the activity of a number of the endocrine glands can be increased; that by sexual intercourse hypoplastic ovaries in women can be improved, and that by means of the roentgen ray one can increase the activity of the ovaries and the hypophysis. We are aware that all these claims have been made on the basis of experimental or clinical observations. They have also been contradicted on the basis of equally good research, and the critical worker is compelled to say that none of these claims are proved and that some of them are nearly disproved.

The author gives abundant references to the literature in all the chapters but, curiously, in a short list of larger works on the endocrines at the end of the work, the author cites thirty German publications but only two Italian, one English, one French and two American workers. This may be all right in a book intended primarily for German biologists and clinicians, but it does not give a fair impression of the available and valuable monographs in the different languages. On page 184 the author says that "up till the present it has not been possible to control or prevent the symptoms that follow impairment of the hypophysis, the ovaries, the testes or the suprarenals through any method of organotherapy." This statement has to be corrected in the case of the anterior lobe of the hypophysis, for Smith and Evans have recently shown (in rats) that daily parenteral administration of fresh anterior lobe of the hypophysis is able to overcome the symptoms of removing of the anterior lobe.

The present monograph will take its place with the most suggestive if not the most critical and conclusive in the field.

TUBERCULOUS INTOXICATIONS, CONCEALED AND MASKED TUBERCULOSIS. A Clinical Study. By Joseph Hollós, M.D., Pathologist of St. Vincent's Hospital, Staten Island, New York. Cloth. Pp. 131, with 3 charts. Edinburgh: E. & S. Livingstone, 1928.

Here is a descriptive review of the syndromes usually characterized as tuberculous intoxications. Ten of the fourteen chapters are devoted to emphasizing the tuberculous origin of these symptoms. The preclinical, prodromal or latent symptoms of tuberculous disease are now generally recognized as having been preceded by a tuberculous intoxication. Poncet pointed out that joint rheumatism in the young is frequently evidence of tuberculous intoxication and Teissier that an albuminuric syndrome, a cyclic albuminuria, in young persons is often a prodromal sign of a bacillary infiltration of tuberculous origin. The author points out here that many more noticeable symptoms observed in suspected individuals are really of tuberculous origin and that these signs are not suspected by the patient and are often overlooked by the physician as being tuberculous. The recognition of these symptoms is of utmost importance for an early diagnosis of tuberculosis.

The author seems somewhat overenthusiastic since he urges that there is scarcely a symptom of disease in any individual which cannot be traced to a tuberculous intoxication. The experienced phthisiotherapist will not always agree with his reasoning. Admitting that such syndromes as leukorrhea, headache, appendicitis, epilepsy, exophthalmic goiter, cholecystitis, coryza, angina and chronic catarrh may be of tuberculous origin, he will become somewhat skeptical when he reads (page 104, case 52) that a patient who had leukorrhea lasting for ten or more years was perfectly cured after seven injections of 0.5 cc. each of immune blood, a total of 3.5 cc. in seven weeks, or, in a case of exophthalmic goiter (page 62, case 24), that all symptoms entirely disappeared in three months' treatment with immune blood injections.

The author gives sixty case histories, all of which are of some importance. However, it is much to be regretted that, while in nearly every instance the pulse rate is given, the temperature curve is infrequently mentioned. In many histories, mention is made of an apex retraction, high note, râles, prolonged expiration, change in percussion sounds, and Pottenger's sign. In two cases pleurisy is mentioned, and all evidence of either active, healed or quiescent tuberculous lesions. In such histories it would have been advisable to state the temperature. The lability of the pulse and the deviation of the temperature curve from the normal are really the first signs of a tuberculous intoxication.

Since 1909, Hollós, while still at Budapest, has persistently advocated the early recognition of a tuberculous intoxication as a syndrome of cryptic tuberculosis. This is generally accepted by the medical profession. Yet one cannot but hold with Roepke, one of the most eminent of workers in the field, that the emphasis placed by the author on the symptomatic immune blood treatment in neurasthenia, hysteria, exophthalmic goiter and anemia has not proved of value on any tuberculous process (page 56). The curative agent, immune blood or Carl Spengler's I. K. (*immune Koerper*), a tuberculoprecipitin from hemolysis

of red blood corpuscles, is an antigen simulating in action the tuberculins, exerting like all tuberculins a favorable influence on the tuberculous process while the lesion is still localized and the defense process of the body can still be aroused.

An intensive study of this book may be of value to the physician who is especially interested in tuberculosis work and to the pediatrician observing tuberculous infection in childhood. The reading of its chapters may be easily misinterpreted by the general practitioner if from the text he concludes that tuberculous intoxication may be recognized early and that he can anticipate a cure by the use of a few subcutaneous injections of immune blood.

NOUVEAU TRAITÉ DE MÉDECINE. Par G. H. Roger, Fernand Widal, et P. J. Teissier. Fascicule XVIII. Pathologie du système nerveux. Sémiologie générale. Coma et apoplexie. Par W. Janowski. Cephalées. Par J. Lévy-Valensi, etc., etc. Boards. Price, 85 francs. Pp. 812, with illustrations. Paris: Masson & Cie, 1928.

This volume includes the general pathology of the nervous system. The amount of knowledge accumulated is tremendous, but completeness is accomplished here and there by means of compressing a vast number of dates and a large number of clinical pictures into a much too narrow frame. For example, it is simply impossible to discuss psychology and all the psychiatric syndromes within less than a hundred pages. Another deficiency is to be seen in the equipment of this book—poor grade paper and pictures as well as careless binding, a fact difficult to explain for any one who knows how the French appreciate a beautiful solidity. But, to offset these disadvantages, every one will find something in the many independent articles: the neurologist, the general physician, and, not least, the student. Chapters on disorders of sensation by Madame Dejerine and E. Gauckler, on disorders of the reflexes by Foix, Chavany and André Thomas, that on electric reactions by Guilleminot and Bourguignon, or those chapters dealing with vertigo, aphasias, and the different paralyses, among others, are intensely interesting and valuable. Such names as K. Petrén, Sven Ingvar, H. Meige, A. Hautant and J. A. Sicard guarantee the value of the book. One enjoys encountering everywhere in this volume the excellent clinical observations so essential in French medical science.

AN ELEMENTARY MANUAL OF PHYSIOLOGY: For Colleges, Schools of Nursing, of Physical Education, and of the Practical Arts. By Russell Burton-Opitz, S.M., M.D., Ph.D., Attending Cardiologist, Lenox Hill Hospital, New York. Third edition. Cloth. Price, $2.50 net. Pp. 419, with 147 illustrations. Philadelphia: W. B. Saunders Company, 1928.

What was said about the second edition of this little book—that it is admirably adapted for the purpose for which it was intended—applies equally well to the new edition, because it is essentially a reprint of the previous one. Of the forty chapters, thirty-six are absolutely unchanged. In two chapters there are minor additions, and in two others minor revisions, mainly of a grammatical character. The statement that "the size and shape of the different cells vary considerably" has been revised to read "cells vary greatly in size and shape." Revisions of this type may fulfil the legal requirements for recopyrighting the book, but they surely do not offer a moral ground for calling the new edition "revised." There is not a sentence in the few minor changes that would indicate that any progress has been made in the science of physiology since the last edition was published, and this often is the only justification that the author or publishers can have in issuing a revised edition of any scientific book.

MENTAL DISORDERS. A Handbook for Students and Practitioners. By Hubert J. Norman, M.B., Ch.B., D.P.H., Medical Superintendent, Camberwell House, London. Cloth. Price, $5. Pp. 463, with illustrations. New York: William Wood & Company, 1928.

The author begins his preface with an apology for venturing to write another book on mental disorders, excusing himself on the ground that if there is nothing new he may at least achieve the goal of looking at old truths from a different angle. And yet that angle is simply one of attempting to write in almost compendium form something about all mental disorders. The book has many inaccuracies, the subject matter is often treated facetiously by irrelevant footnotes, and the illustrations are inadequate. The chapters on organic brain diseases could well be dispensed with as far as their ability to convey any knowledge of the subject is concerned. As the book is intended for students it must be compared with existing psychiatric textbooks, and it will then be seen that it must soon pass forgotten. This is another example of the failure of the English school to attempt to use its own textbooks rather than the more adequate and worth while books from other countries.

SEXUAL APATHY AND COLDNESS IN WOMEN. By Walter M. Gallichan. Cloth. Price, $2.50. Pp. 183. Boston: Stratford Company, 1928.

The works of Professor Gallichan in the field of physiology have long had recognition for their soundness. The present volume lists current conceptions, calls just sufficiently on psychoanalysis, recognizing that there are far more psychologic than physical causes for the conditions concerned, and rightly enough places at least half the responsibility on the male. Gallichan is familiar not only with the scientific literature on the subject but also with the discussions made by novelists who have had psychologic insight. He recognizes the need of further study in this field, and looks forward to the time when at least as much attention will be paid to the problems of sex as are paid to the question of nutrition.

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Ninth edition. Cloth. Price, $6 net. Pp. 778, with 191 illustrations. Philadelphia: W. B. Saunders Company, 1928.

The chief feature of this edition of Professor Jordan's exceptional textbook is a rewriting of the chapter on the parasitic protozoa. Advantage has been taken of new researches on erysipelas, scarlet fever and rheumatic fever. The work of Francis on tularemia is also given in detail. The well established position of this book in the field it covers makes any detailed critical review unnecessary.

SELECTED PAPERS ON INJURIES AND DISEASES OF BONE. By Sir William Ireland de C. Wheeler, B.A., M.D., F.R.C.S.I., Surgeon to Mercer's Hospital, and the National Children's Hospital, Dublin. Cloth. Price, $4. Pp. 148, with 100 illustrations. New York: William Wood & Company, 1928.

This is a group of selected papers and lectures dealing with associated injuries and diseases of bone. Operative and nonoperative treatment of fractures of the lower extremity are adequately covered. In addition, the author has included a number of difficult problems in bone surgery of the upper extremity and skull. Surgical treatment of tuberculosis and osteomyelitis are touched on. The effort of the author to discuss only a few of the more difficult problems could be well followed by others who have heretofore attempted to cover the entire field. Well tried and approved methods may thus be brought down to date under one cover for convenient reference.

CLINICAL ASPECTS OF THE ELECTROCARDIOGRAM. A Manual for Physicians and Students. By Harold E. B. Pardee, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical School. Second edition. Cloth. Price, $5.50. Pp. 242, with 60 illustrations. New York: Paul B. Hoeber, Inc., 1928.

This remains one of the most valuable textbooks of its size on the clinical aspects of the electrocardiogram. Orthodox curves with the normal variants have been carefully described in the first chapters. In the two succeeding chapters, on the changes in the electrocardiogram due to disease and the disturbances in rate and rhythm, the author has assembled with great care the most important features of clinical electrocardiography with which the seeking physician should familiarize himself. They are written so plainly that the subject matter may be readily grasped by the beginning student. At the same time they are so comprehensive that those quite familiar with the features of the electrocardiogram will find information for which he might be otherwise searching for years. While there is some overlapping in this relatively small volume, this is not to be caviled at; rather the author is to be congratulated for having given a fine exposition in which the essential features of abnormal curves have been emphasized. One is convinced that the book is the work of an expert cardiologist who has inseparably linked the interpretation of the curves with the clinical observations. The technical discussion is almost entirely confined within the bounds of one chapter. There is also given a complete description of the electrocardiograph and its operation.

V 9
192

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

DIE MALARIABEHANDLUNG DER PROGRESSIVEN PARALYSE. Von Privatdozent Dr. Josef Gerstmann, Assistent der Universitätsklinik für Psychiatrie und Nervenkrankheiten in Wien. Mit einem Vorwort von Professor Dr. Julius Wagner-Jauregg, Vorstand der Universitätsklinik für Psychiatrie und Nervenkrankheiten in Wien. Second edition. Paper. Price, 22.40 marks. Pp. 309, with 17 illustrations. Vienna: Julius Springer, 1928.

Complete survey of the status of the malarial treatment of paresis as seen by its progenitors on their native heath.

A COLLEGE TEXTBOOK OF HYGIENE. By Dean Franklin Smiley, A.B., M.D., Medical Adviser and Assistant Professor of Hygiene in Cornell University, and Adrian Gordon Gould, Ph.B., M.D., Assistant Medical Adviser and Assistant Professor of Hygiene in Cornell University. Cloth. Price, $2. Pp. 333, with 75 illustrations. New York: Macmillan Company, 1928.

Systematic outline of fundamental views of hygiene for college students.

STRÜMPEL-SEYFARTH LEHRBUCH DER SPEZIELLEN PATHOLOGIE UND THERAPIE DER INNEREN KRANKHEITEN. Für Studierende und Aerzte Band I. Von Dr. Med. et Phil. Carly Seyfarth, a. o. Professor für innere Medizin an der Universität, Leipzig. Twenty-Seventh edition. Paper. Price, 25 marks. Pp. 872, with 182 illustrations. Leipzig: F. C. W. Vogel, 1928.

Twenty-seven editions attest the usefulness of this guide to pathology.

LEHRBUCH DER ALLGEMEINEN PATHOLOGIE UND DER PATHOLOGISCHEN ANATOMIE. Von Professor H. Ribbert. Neu bearbeitet von Dr. Carl Sternberg, Professor für pathologische Anatomie an der Universität in Wien. Paper. Price, 45 marks. Pp. 727, with 739 illustrations. Leipzig: F. C. W. Vogel, 1928.

New edition of a popular German textbook of general pathology, reedited by Carl Sternberg.

DIE KLINISCHE RÖNTGENDIAGNOSTIK DER INNEREN ERKRANKUNGEN. 1. Hälfte. Von Dr. Herbert Assmann, ord. Professor der speziellen Pathologie und Therapie in Leipzig. Fourth edition. Paper. Price, 35 marks. Pp. 512, with illustrations. Leipzig: F. C. W. Vogel, 1928.

Fourth edition of the best available work on clinical uses of the x-ray.

THE EXAMINATION OF PATIENTS. By Nellis B. Foster, M.D., Associate Physician to the New York Hospital. Second edition. Cloth. Price, $4.50 net. Pp. 392, with 83 illustrations. Philadelphia: W. B. Saunders Company, 1928.

A new and reliable textbook of physical diagnosis.

COPROLOGIE CLINIQUE EXPLORATION-SÉMÉIOLOGIE ET DIAGNOSTIC COPROLOGIQUE. Par José-Maria Rosell, spécialiste des maladies de la nutrition à Barcelone, et Jean Cambiès, médecin-consultant à Chatel-Guyon. Préface du Dr. Bensaude, médecin de l'Hôpital Saint-Antoine. Paper. Pp. 239, with illustrations. Paris: Vigot Frères, 1927.

INTRODUCTION BIOLOGIQUE A L'ÉTUDE DE LA NEUROLOGIE ET DE LA PSYCHOPATHOLOGIE. Integration et désintégration de la fonction. Par C. v. Monakow, professeur honoraire à la Faculte de médecine de l'Université de Zurich, et R. Mourgue, lauréat de l'Institut de France. Paper. Pp. 416, with illustrations. Paris: Félix Alcan, 1928.

A REPORT ON CHRONIC ARTHRITIS WITH SPECIAL REFERENCE TO THE PROVISION OF TREATMENT. By J. Alison Glover, O.B.E., M.D., M.R.C.P., Ministry of Health. Reports on Public Health and Medical Subjects, No. 52. Paper. Price, 1s. 6d. net. Pp. 103, with illustrations. London: His Majesty's Stationery Office, 1928.

LOS ACTUALES CONOCIMIENTOS DEL METABOLISMO MINERAL: La importancia fisiológica, patológica, terapéutica e higiénica de los elementos minerales contenidos en los alimentos y en el agua. Por el Dr. José M. Rosell. 1.ª Parte e 2.ª Parte. Paper. Price, 12 pesetas, each. Pp. 129. Barcelona, 1927.

PATHOLOGISCHE ANATOMIE DER TUBERKULOSE. Von P. Huebschmann, o. Professor, Direktor des pathologischen Instituts der medizinischen Akademie in Düsseldorf. Paper. Price, 86 marks. Pp. 516, with 108 illustrations. Berlin: Julius Springer, 1928.

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Forty-Sixth Year, 1928. Cloth. Price, $6. Pp. 574, with illustrations. New York: William Wood & Company, 1928.

Medicolegal

Arteriosclerosis and Injury Followed by Septicemia

(Armour Fertilizer Works v. Baker et al. (Md.), 139 Atl. R. 356)

The Court of Appeals of Maryland, in affirming a judgment which affirmed an award of the state industrial accident commission granting compensation to the dependent childen of a man who died from the effects of septicemia, says that it was alleged that the septicemia resulted from an infection of the big toe of the man's right foot, which had been injured and developed gangrene. The medical evidence proved without dispute the existence of an arteriosclerotic condition which made the man susceptible to serious consequences from a slight infection, and it was the contention of the man's employer, in support of which expert testimony was produced, that the septicemia was not caused by infection from an external injury but had an internal origin resulting from the arteriosclerosis. Moreover, there was evidence that the man had relieved the pain in his toe by cutting it with a knife or a razor. The material and decisive inquiry was whether the death of the man resulted from an injury which arose out of and in the course of his employment. Even though the septicemia may have had its origin in the body of the man, yet if it was aggravated, and its fatal effects accelerated, by an accidental injury arising out of and in the course of his employment, the claimants were entitled to an award.

The jury was instructed that, if it should find that the man was accidentally struck on the toe by a heavy instrument while in the employ of the appellant, and while he was working at his usual task, and that the injury produced a swelling and poisoning of his toe, and that his death was hastened by the poisoning thus caused, then the verdict of the jury should be in favor of the claimants, even though the jury might find from the evidence that the man was suffering, prior to and at the time of such injury, with arteriosclerosis and with a diseased and painful foot, and that he cut his toe with a nonsterile knife, and that infection resulted partly from such treatment, and notwithstanding the jury might find that the accident to the toe occurred in October or November prior to the man's death, January 8. If, as this instruction required the jury to find before answering the issue affirmatively, the man had, while doing his usual work in the course of his employment, sustained the described accidental injury to his foot, which caused it to become poisoned, and his death to be thereby accelerated, the right of the claimants to be awarded compensation would not be nullified because of any or all of the facts to which the latter part of the instruction hypothetically referred. Neither the preexistence of a disease which made the man more susceptible to serious results from a slight injury, nor his crude attempt to relieve his pain, nor the fact that the accident happened at the time indicated in the instruction, would disentitle the claimants to compensation, if the primary facts specified in the instruction as essential to the validity of the claim were duly established. While the instruction might be somewhat unusual in form it could not have been properly refused, as its propositions were not subject to sound legal criticism.

Delayed Trial Due to Epidemic of Infantile Paralysis

(Ex parte Venable (Calif.), 261 Pac. R. 731)

The District Court of Appeal of California, third district, says that the petitioner, who was charged with the unlawful possession of intoxicating liquor, applied for a writ of habeas corpus on the ground that he had not been given a speedy trial. The return showed and the petitioner admitted that from the first to the middle of September, 1927, an epidemic of infantile paralysis was prevalent in the town wherein the sessions of the justice's court were held, and that for that reason no juries were called during that period. On a showing that the defendant had been detained without a trial for more than sixty days the court, it has been held, should dismiss the case, unless good cause for detaining the defendant

and for continuing the prosecution is shown on behalf of the people. It cannot be said that the prevalence of the epidemic, which commenced within the period of sixty days, did not constitute good cause for continuing the trial a day beyond the sixty-day period. Wherefore the writ was discharged and the petitioner remanded to the custody of the sheriff.

Privileged Information—Waiver in Insurance Policy

(Pride v. Interstate Business Men's Acc. Ass'n (Iowa), 216 N. W. R. 62)

The Supreme Court of Iowa, in affirming a judgment in favor of the plaintiff on a policy of accident insurance, says that the insured lost his life as the result of a gunshot wound, and the first question was: Was it accidental or suicidal? Three physicians were called to attend the insured at the time of his injury. The defendant called each of the physicians as a witness and offered to prove by him certain statements made by the insured on the night of his injury concerning the method of the injury and tending to show that it was self-inflicted. This offered evidence was objected to by the plaintiff on the ground, among others, that the communication was confidential and privileged within the meaning of the Iowa statute in such case, which provides (section 11263, code 1924) that no physician or surgeon who obtains information by reason of his employment shall be allowed, in giving testimony, to disclose any confidential communication properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice. These physicians were concededly attending the insured in a professional capacity. It was argued by the defendant, however, that the information thus given by the insured was not necessary and proper to enable the physicians to discharge the function of their office.

This court has held repeatedly that it will draw no fine lines as to whether a communication is necessary or unnecessary. It is the policy of the statute to provide for great freedom of disclosure by a patient to his physician. The patient is not in a position to know what disclosure may be necessary and what may be unnecessary. He could know the distinction only by inquiry from the physician himself or from other expert advice. All the previous cases of this court take a broad ground on this subject and construe the statute liberally to the protection of the confidence reposed by a patient in his physician.

It was further contended by the defendant, however, that the statutory privilege in question had been waived by the insured by a provision in his policy. The application for insurance made by the insured contained the following question and answer:

> Q. In so far as you are permitted to do so under the laws of the state in which you now reside, for yourself, and for your beneficiary, do you consent that any physician or surgeon who has been consulted by you may be examined touching any knowledge he may have acquired by reason of his relation to you, and give information in regard thereto pending the acceptance of this application and in the event of any claim being made under the certificate to be issued on this application? A. Yes.

It was contended by the defendant that by such application the insured waived the privilege of the statute on confidential communication. It is undoubtedly true that a patient may waive his privilege, and that he may do so by contract in advance. But it was contended by the plaintiff that the proviso quoted had no application to the particular question here before the court. It will be noted from a reading of the quoted proviso that the waiver speaks in the present and in the past tense, and that it does not in terms refer to future communications. The defendant construed this proviso as though it read:

> In so far as you are permitted to do so under the laws of the state in which you now reside, for yourself and for your beneficiary do you consent that any physician or surgeon who has been consulted by you (or may hereafter be consulted by you) may be examined, etc.

This court thinks that the plaintiff's position was well taken, and that the insured did not purport to waive the confidence of communications which he might thereafter make. The parenthetical words were not in the proviso, and the plaintiff was not entitled to enlarge, by interpretation, the policy which was formulated by itself.

Society Proceedings

COMING MEETINGS

American Hospital Association, San Francisco, August 6-10. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.
Idaho State Medical Association, Yellowstone Park, August 27-29. Dr. J. N. Davis, Kimberly, Secretary.
Medical Library Association, New York, September 5-7. Miss Sue Blethan, Medical Librarian, University of Michigan, Ann Arbor, Sec'y.
Montana, Medical Association of, Yellowstone Park, August 27-29. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
Pacific Association of Railway Surgeons, San Francisco, August 24-25. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.
South Dakota State Medical Association, Hot Springs, August 7-9. Dr. John F. D. Cook, Langford, Secretary.
Washington State Medical Association, Seattle, August 27-30. Dr. Curtis H. Thomson, 508 Cobb Building, Seattle, Secretary.
Wyoming State Medical Society, Yellowstone Park, August 27-29. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-Third Annual Meeting, held at Washington, D. C., May 1-3, 1928

(Concluded from page 52)

Production of Renal Injury in the White Rat by the Protein of the Diet

DRS. L. H. NEWBURGH and A. C. CURTIS, Ann Arbor, Mich.: Great care was taken in the makeup of the diets to see that they included all the essential food elements according to the modern doctrine. The percentage of protein in the diet varied between 12, 18, 25, 32, 39 and 75. As the protein percentage increases, evidence of renal injury appears. The longer the feeding is continued, the more marked the evidence becomes, so that when there is protein in the diet to the extent of 75 per cent, the number of casts in the urine is large. The diets contained various kinds of protein. We have found while casein is slightly injurious, the injury might easily be overlooked. If certain other types of protein are used the injury is so great that there cannot be any reasonable doubt about the effects from such diets. If beef muscle is used, it gives ten times the amount of albumin in the urine, and a large number of casts; and when liver is used, the injury is further increased. No animal on a liver diet survived a year. Sections of the kidney of a rabbit on a diet containing 30 per cent of beef protein for fifteen months showed abnormality in the form of dilatation of the tubules. The same diet fed four months longer caused an interesting glomerular lesion. A diet of 40 per cent of beef protein results in a connective tissue increase around the glomeruli. A diet of 70 per cent beef fed for more than a year causes a diffuse connective tissue increase, especially marked around the glomeruli. The kidneys without exception in the animals receiving liver were granular. We wish to emphasize that the type of protein is the most important factor in considering whether any diet high in protein will produce kidney injury. The next important factor is the time limit. A long time must be allowed to produce the injury. The final effect is obtained from the concentration of the protein, which seems to us to be less important than the type of protein, or the duration of the experiment.

DISCUSSION

DR. H. A. CHRISTIAN, Boston: I should like to ask two questions: Are hypertrophy and shrinkage combined in the pathologic kidney? Were any observations made on the possible presence of a peculiar hyaline type of degeneration in the capsule, which I described many years ago as one of the early lesions that occurred in rabbits on uranium nitrate?

DR. L. H. NEWBURGH, Ann Arbor, Mich.: The granular kidney is the larger. One of the things in which we are interested is to determine whether, if we follow this experiment serially, the kidneys will pass through a stage of enlargement, followed by one of real contraction. We have approached the question of how these differences come about by studying amino-acids. Some years ago we injected a number of amino-acids intravenously into dogs and found very striking differences. Some, such as the simpler ones like glycine and alanine were harmless in large amounts, and others, like histidine, may be made to act like violent poisons. We are now engaged in feed-

ing various amino-acids and are getting similar results, so that we believe that the differences between casein and beef are entirely explained by the difference in amino-acid composition of these two proteins.

Diuretic Action of Nitrates and Their Use in the Treatment of Dropsy

DR. N. M. KEITH, MR. M. WHELAN and DR. E. G. BANNICK, Rochester, Minn.: We have been led to advocate the use of ammonium nitrate because, while ammonium chloride was often an effective diuretic in edematous patients, it did not always act in the normal person. We then replaced the chloride ion by the nitrate and found that ammonium nitrate was much more active as a diuretic than ammonium chloride. It brings about an increased urinary excretion of water, chloride and total fixed base in the normal person. We have so far been unable to find any definite toxic manifestations from the nitrate ion itself in the doses given. Of course, it must be remembered that it is dangerous to give any ammonium salt if the blood urea is markedly increased. Our point of view in regard to the diuretic action of nitrate is that the primary action may be renal, but if the intake of nitrate is kept up there is going to be an ultimate effect on the tissues generally, and particularly on the metabolism of water and salts. This study has thrown some light on the action of combined diuretics, such as nitrates and organic mercury compounds. In considering the dosage of such medicines, we must remember that patients with dropsy are not normal, and that the amount of stored fluid in the tissues is much greater than in the normal person, and may even be of a different composition. This fact is of importance when the dosage and manner of administration of these diuretics is being planned.

DISCUSSION

DR. H. A. CHRISTIAN, Boston: What was done to the one patient to make him have the greatest amount of diuresis before he was given the diuretic? Was any cyanosis noticed in the patients receiving nitrates? I had a rather interesting experience of prophesying that a patient receiving nitrates might be expected to become cyanotic. One of our patients was getting large doses of ammonium nitrate, and shortly afterward he became extremely cyanotic, I presume from the formation of methemoglobin. The cyanosis clears up just as soon as the nitrate is stopped, but if it happens frequently, we ought to know about it, largely because it is not desirable to continue the dosage under these circumstances, and also because it is not necessary to get excited about it. We might find that the nitrate used by us was not in pure form but contained some nitrite.

DR. N. H. KEITH, Rochester, Minn.: The patient referred to by Dr. Christian was one of my normal controls. He had a high salt and water excretion normally. The administration of a low salt, low fluid diet had immediately, on the first day, a definite diuretic action, and he reached a basic urinary output of 650 cc., instead of the usually normal output of 450 cc. Nonnenbrook has previously pointed out that a low salt diet may have a diuretic effect. Cyanosis has never occurred in cases in which we have given nitrates. We actually gave one person 10 Gm. of ammonium nitrate daily continuously, the total amount given being 295 Gm., without demonstrable toxic effects.

Oxygen in the Treatment of Postoperative Bronchopneumonia

DRS. R. M. WILDER, M. W. BINGER, E. S. JUDD and A. B. MOORE, Rochester, Minn.: An analysis of the mortality statistics for 1927, while not furnishing biometric proof of the efficiency of oxygen treatment, encourages the belief that an actual saving of life was accomplished by it. Aspiration pneumonia induced in guinea-pigs by intratracheal injection was also successfully treated by confining pigs in an atmosphere of 50 per cent oxygen. On one of our surgical services, oxygen has been administered to selected patients immediately after operation and continued for from twenty-four to forty-eight hours. The patients chosen have been those in whom there was reason for apprehension on the score of pulmonary complication. While the group thus treated is still small, no instance of pulmonary infection has developed in it to date.

Influence of a Polysaccharide Isolated from the Tubercle Bacillus on Normal and Tuberculous Animals

DR. WILLIAM CHARLES WHITE, Washington, D. C.: Drs. Johnson and Anderson at Yale have isolated a pentose from tubercle bacilli. This sugar constitutes something like 33 per cent of the phosphatide fraction of the organism. It probably has some association with its life cycle and death, for it begins to appear at the period of maximum growth and sinking of particles from the film of growth. When the sugar, which is isolated both from the medium and from the phosphatide fraction of the whole bacillus, or rather the water that passes over with the ether-alcohol fraction of the whole bacillus, is introduced into a normal guinea-pig, a rise in temperature occurs within an hour. In a tuberculous guinea-pig, as the tuberculous process advances a more significant rise in temperature occurs about the third week after the introduction of this sugar. But after the tuberculosis is far advanced there is a striking fall in the body temperature, which changes within an hour from 39 to 34 C., with the final death of the animal. There is no disturbance of the respiration or of the heart, but there is an enormous drop in blood pressure, in sharp contrast with the effect of water-soluble protein, which is the essence of the tuberculin-reacting substance and guinea-pig killing part of the tubercle bacillus; in the latter there is a disturbance of the respiration and of the heart rate, but no disturbance of the blood pressure. Hence the pentose fraction has to do with the blood pressure and temperature and the water-soluble protein has to do with the respiratory anaphylactic phenomena which are evidenced by respiratory changes in the animal. In the rapidly dying animals following sugar injection, there was found a congestion of the central portion of the suprarenal. This would seem to be a specific response in the tuberculous animal to the pentose fraction of the tubercle bacillus by the cells of the medullosuprarenal which has to do with the governing of body temperature.

Seasonal and Geographic Variations in the Iodine and Thyroxin Content of the Thyroid

DR. EDWARD C. KENDALL, Rochester, Minn.: We have analyzed 100 pounds of fresh hog thyroid glands during the first few days of each month for the past twenty months. In addition, we have analyzed various samples of thyroid material from different parts of the United States and England. It has already been shown by other workers that there is a seasonal variation in the total iodine. We have confirmed this, and find that in January and February 100 pounds of thyroid may contain 14 Gm. of iodine, while in July and August the iodine increases to about 40 Gm., so that there is about a 300 per cent variation in the total iodine content. The amount of thyroxin in these glands has also been determined. The importance of considering the compounds which are not thyroxin and which contain iodine is shown by the fact that in the summer, when the iodine content is highest, the proportion of total iodine in the form of thyroxin is not more than 10 per cent. This figure is for almost pure thyroxin (more than 90 per cent thyroxin). In the winter there is a decrease in the amount of total iodine in the form of thyroxin, and it may drop to less than 5 per cent, so that from 90 to 95 per cent of the total iodine in the gland is in some form other than thyroxin. The seasonal variation apparently does not occur in the English and Scottish glands. The amount of iodine apparently is uniform. The relationship between the iodine compounds of the thyroid does change greatly when the material is allowed to stand, so that it appears certain that some chemical change can occur in thyroxin when the glands are desiccated or when they have been freshly ground. This modifies the thyroxin in such a way that it is chemically altered and cannot be isolated, but it is still physiologically active. It appears certain that there is another iodine compound in the gland which has the same physiologic activity as thyroxin. This compound is unstable but it is found in the insoluble fraction. The fact that 10 per cent of the total iodine is the maximal amount of thyroxin makes it impossible to account for the activity of desiccated or fresh thyroid by saying that it is all contained in thyroxin. The only conclusion that can be drawn is that some compound is present that is destroyed with alkali, is stable, at least to some degree, to acid, is not thyroxin, but has the physiologic activity of thyroxin. Thyroxin appears to

be an intermediate form of the active constituent. It must be altered before it can become physiologically active. After this alteration has occurred, it manifests the typical physiologic activity of desiccated thyroid, but it cannot be isolated. It is too unstable. Apparently allowing thyroid material to stand may alter the thyroxin content. This alteration does not consist merely in a detachment of the thyroxin from the protein. If that were so, then the thyroxin could be recovered. It must be some more deep seated modification, and may possibly be the attachment of a second hydroxyl group to the thyroxin.

Nature of the Iodine Reaction in Exophthalmic Goiter

DRS. J. H. MEANS, W. O. THOMPSON and P. K. THOMPSON, Boston: The supply of an excess of iodine brings about a characteristic decrease in the intensity of the manifestations of exophthalmic goiter. This response may be obtained at any stage of the disease. Except after subtotal thyroidectomy, or late in the natural course of the disease, or after some other form of therapy, iodine seldom abolishes more than a portion of the thyrotoxic manifestations; at least, not for more than a brief period of time. The part of the thyrotoxicosis which yields to iodine seems to be variable, and it apparently bears a larger proportion of the total late in the disease than it does earlier. Iodine does not appear to affect the cause of the disease. From the point of view of the physician or surgeon who has to cure this disease, it is quite evident that iodine certainly is not a cure. It is not even a treatment early in the course of the disease when it is developing, and our practice now is to advocate operation in all cases of typical exophthalmic goiter. There are cases late in the course of the disease in which the iodine content is neither increasing nor decreasing and the symptoms are of moderate or slight intensity, in which it is legitimate to use iodine as the sole form of treatment. These cases ought to be selected with great care. There may also be cases of exophthalmic goiter which will run a mild course in which iodine alone will be sufficient treatment. Iodine might control the manifestations to such an extent that it would be legitimate to allow the patient to go without any other treatment, but we are unable to recognize in advance the cases which will run a mild course.

Function of the Thyroid Containing Adenomatous Tissue

DR. HENRY S. PLUMMER, Rochester, Minn.: Up to Jan. 1, 1928, 30,042 patients with disease of the thyroid gland had been operated on in the Mayo Clinic. When the cases pathologically diagnosed as carcinoma, sarcoma, tuberculosis, thyroiditis, and colloid goiter without diffuse hypertrophy or acinar hyperplasia are eliminated, there remain 14,354 cases. The pathologic diagnosis was adenomatous goiter without diffuse hypertrophy in 9,362 cases and diffuse hypertrophy in 4,992 cases. In the cases diagnosed as diffusely hypertrophic, in 326 (6.53 per cent), thyroidectomy was performed a second time at the Mayo Clinic. This number includes cases in which medical treatment had been carried out before the second-stage operation. Of the 9,362 cases pathologically diagnosed adenomatous goiter, between 2,000 and 2,500 were diagnosed as hyperthyroidism. In these 2,000 or more cases, a second resection of the thyroid gland was performed in only three. Two of these cases were diagnosed hyperthyroidism previous to the second operation and adenomatous goiter without diffuse hypertrophy by the pathologist. This third case was diagnosed exophthalmic goiter before the second operation, and diffuse hypertrophic goiter by the pathologist. The fact that after thyroidectomy in cases of adenomatous goiter without hyperthyroidism the basal rate returns to normal and remains there has for years been one of the foundation stones in my concept of the function of the thyroid gland, and has kept me on the lookout for recurrences. In the two cases in which the subsequent diagnosis was exophthalmic goiter, the interval between the first and second operation was five and six years, respectively, and the highest basal metabolic rate estimations preceding the second operation were, respectively, + 21 and + 32. The interval between operations in the case in which the patient returned with frank exophthalmic goiter was ten years. This long period indicates that a new disease process had developed. That the pathologic diagnosis of diffuse hypertrophy more accurately segregates cases of exophthalmic goiter than does the clinical diagnosis of this disease is again established by a study of recurrences. Of the cases of hyperthyroidism in which an initial clinical diagnosis of exophthalmic goiter has been made in the Mayo Clinic, a pathologic diagnosis of diffuse hypertrophy was not made in approximately 900. A yearly study of this group since 1908 has shown that in these cases the initial clinical diagnosis was incorrect in more than 90 per cent. While it is conceded that there is little tendency for hyperthyroidism to recur after resection of adenomatous goiter, these data seem almost inconceivable in view of the following observations: 1. The majority of thyroid glands in which adenomatous goiter is diagnosed by the pathologist and hyperthyroidism by the clinician contain localized hypertrophy either in the areas of acinar hyperplasia or in the surrounding tissue. In some cases a distinction between the local and diffuse hypertrophy is not possible. 2. Diffuse hypertrophy is not present throughout the course of all cases of exophthalmic goiter. 3. A case of old adenomatous goiter with the more recent development of exophthalmic goiter may come to operation at a period when diffuse hypertrophy is absent. 4. In approximately 20 per cent of the cases of exophthalmic goiter, the disease is superimposed on old adenomatous goiter. 5. In many of the cases of adenomatous goiter with hyperthyroidism, only enucleation was done, and in a large percentage of cases adenomatous tissue was left in the portion of the gland not removed. 6. The consistency of the pathologic diagnoses is due to the intensively sustained effort of MacCarty and his associates in their examination of tissues removed at operation.

DISCUSSION ON PAPERS OF DR. KENDALL, DRS. MEANS, W. O. AND P. K. THOMPSON, AND DR. PLUMMER

DR. ALDRED SCOTT WARTHIN, Ann Arbor, Mich.: With the enormous amount of material that is being seen in various clinics, it is extraordinary that what seems to me to be the most important histologic change in the thyroid is practically never mentioned as a pathologic observation by these clinics. I refer to the hyperplasia of the lymph nodes of the thyroid, which constitutes the most striking feature of the pathologic histology of the exophthalmic goiter thyroid. I belive in the entity of so-called toxic adenoma and exophthalmic goiter and that we should no longer use such a term as exophthalmic goiter or Graves' disease. The most important pathologic change in these persons with thyroid disturbance is the evidence of a constitutional entity, and that is always shown in the thyroid by a marked hyperplasia of the lymphoid tissue. I believe that the person who is going to have exophthalmic goiter, or the so-called toxic adenoma, is destined at birth to have such a condition. The essential pathology is constitutional, and that constitution is always shown by the extraordinary activity on the part of the lymphoid tissue. I believe that there is a constitutional basis behind all these cases, and I believe in the constitutional entity of so-called exophthalmic goiter and the so-called toxic goiter. Almost everybody has an adenoma of the fetal type, but unless the individual has the constitution, he will never have the so-called toxic state. If he also has the Graves constitution, he will develop the symptoms of so-called toxic adenoma. An individual may have as many as seventeen operations for the removal of adenomas, and the trouble will still return, because the individual has the Graves constitution.

DR. H. S. PLUMMER, Rochester, Minn.: I have not been sufficiently energetic in presenting the two product theory. I do not know that there are two products. The two product hypothesis is the only one by which we can correlate most of the phenomena that we know to be true. The pathologists, in general, do not know enough of the clinical side and the clinicians do not know enough of the pathologic side to see this.

DR. J. H. MEANS, Boston: It is going to be difficult to show that there are two products. Nobody knows anything at all about it at present. It is insusceptible of proof. There may be two products or two different sorts of effect on the organism by a single product. It does seem as though there were two components to the thyrotoxicosis as shown by the clinical manifestations, and I think that is as far as we can go now. The theory seems to harmonize with such data as we have obtained so far. I should like to agree with Dr. Warthin that

V 9
192

it does seem as if there was some constitutional factor in the production of exophthalmic goiter, but here again it is very difficult to do anything more than theorize. The low metabolic rate which some of these patients show after they have recovered from a bad case of exophthalmic goiter perhaps may indicate that they are different from most persons and that they may have a constitutional abnormality. The only difficulty is that we see a great many patients who show the same phenomenon (low metabolism) who do not develop the disease. Perhaps it requires both the constitution and a certain stimulus to initiate this syndrome.

DR. E. C. KENDALL, Rochester, Minn.: It is doubtful whether the chemist will ever separate the second hypothetic substance which Dr. Plummer has been talking about. It must be very labile and it is probably joined to a protein, but there is one point of which we are certain, and that is, that the symptoms associated with toxic adenoma are produced by pure crystalline thyroxin alone.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

175: 721-876 (June) 1928

Hemoglobin Construction Within Body as Influenced by Diet Factors: Consideration of Anemia Problems. G. H. Whipple, Rochester, N. Y. —p. 721.
*Ophthalmoplegia in Exophthalmic Goiter. A. M. Wedd, Clifton Springs, N. Y., and H. H. Permar, Pittsburgh.—p. 733.
*Hyperthyroidism and Diabetes. H. J. John, Cleveland.—p. 741.
*Transient Insulin Hypoglycemic Hemiplegias. J. M. Ravid, Ann Arbor, Mich.—p. 756.
*Suprarenal Insufficiency: Two Cases. H. E. Marsh, Madison, Wis. —p. 769.
*Blood Pressure in Pernicious Anemia. J. Lerman and J. H. Means, Boston.—p. 777.
Pollen Allergy: Skin Reactions of Patient Before and After Treatment with Spring (Grass) Pollens. R. W. Lamson, G. Piness and H. Miller, Los Angeles.—p. 791.
Id.: IV. Skin Reactions Before and After Treatment with Fall Pollens. R. W. Lamson, G. Piness and H. Miller, Los Angeles.—p. 799.
*Two Cases of Peripheral Neuronitis Resembling Landry's Paralysis. R. H. Thompson, Philadelphia.—p. 807.
Facial Diplegia. F. P. Currier, Grand Rapids, Mich.—p. 811.
Meralgia Paresthetica. J. H. Huddleson, New York.—p. 823.
Flexible Gastroscope. W. S. Collens and I. Gray, New York.—p. 831.

Ophthalmoplegia in Exophthalmic Goiter.—A case of recurrent exophthalmic goiter is reported on by Wedd and Permar in which the symptoms began with visual disturbances due to external ophthalmoplegia, and death resulted during a thyroid crisis. The postmortem examination revealed changes in the thyroid gland believed to represent an exhausted state. There were degenerative changes in the suprarenal cortex, while the thymus showed an unusual degree of degeneration. The ophthalmoplegia in the case studied is believed to have been a part of the goiter syndrome and not an expression of an independent symptom complex.

Hyperthyroidism and Diabetes.—In cases of hyperthyroidism in which hyperglycemia is present, John says the preoperative routine should include a high caloric diet, together with the administration of small doses of insulin, in order that the glycogen-poor or glycogen-free liver may be restocked. In mild cases of hyperglycemia this will prove a useful, and in severe cases an essential, supporting measure.

Transient Insulin Hypoglycemic Hemiplegias.—A new syndrome of a complete hemiplegia occurring on three different occasions in a diabetic patient during an insulin hypoglycemic reaction is described by Ravid. Two of these hemiplegias exhibited the classic features of those seen in a lesion of the internal capsule and possibly also involving the retrolenticular portion of the posterior limb (the latter because of the marked hemianesthesia). The hemiplegias were transitory in character, lasting from three to seven hours, and were followed by a complete recovery, leaving no residue of the paralysis after their disappearance. It is shown that this new phenomenon of transient hypoglycemic hemiplegia is not a syndrome *sui generis*, but belongs to the rather general and not infrequently encountered group of transient paralyses and hemiplegias. Views and experimental data regarding the mechanism and nature of the action of insulin from the chemical-metabolic and physiologic aspects are reviewed and discussed. The idea put forward by Ravid is that, aside from all other effects of insulin in the hypoglycemic reactions, there is always a definite action on the central or peripheral nervous system. This action may be initiated directly by insulin itself, by the still unknown intermediary products of carbohydrate metabolism that it produces, as by creating, as it were, a "vacuum" for dextrose in the nerve tissues or by a process similar to this. The resulting effect, then, may manifest itself by alteration of function of either the nerve elements themselves or the blood vessels supplying them.

Suprarenal Insufficiency.—Two cases are reported by Marsh which clinically conform to Addison's disease. Both patients improved under substitutional therapy and are still living. Both had recurrence of symptoms whenever treatment was discontinued.

Blood Pressure in Pernicious Anemia.—Analysis made by Lerman and Means of the blood pressure in 500 cases of pernicious anemia showed only slight variation in the averages due to age or sex. Compared, however, with average figures for normal persons, it is significantly lower. Hypotension is a more frequent condition in pernicious anemia than in tuberculosis. It appears that in pernicious anemia hypotension is associated with an almost complete disappearance of hypertension, whereas in tuberculous patients the existence of hypotension has little effect on the frequency of hypertension. The pulse pressures in pernicious anemia are higher than the corresponding normal ones by from 9 to 17 mm. of mercury. This increased pulse pressure is apparently a feature of an increased volume flow of blood of a compensatory nature, and finally results in hypertrophy of the cardiac musculature. With improvement in the blood picture, the pulse pressure tends to diminish.

Peripheral Neuronitis Resembling Landry's Paralysis.—One case reported by Thompson was apparently a true Landry's ascending paralysis with recovery, while the second might be termed a symmetrical ascending polyneuritis with cranial nerve involvement. Still, they were very similar, differing mainly in degree of intensity and in the time elapsing in development and recovery. The two cases began in the same manner in the peripheral nerve fibers, involving not only the terminal branches but also the trunks, roots and, most likely, their central cell origins but not to the point of destruction. In the first case, in addition to the signs of peripheral nerve involvement, there were pain and tenderness over the whole body with a stiff neck, Kernig's sign and a papillitis, all indicative of meningeal involvement. The condition of the spinal fluid tended to corroborate the diagnosis, as it contained a large amount of protein, had a very slight yellowish tinge, an absence of a colloidal gold curve and a cell count of 53 per cubic millimeter.

American J. Obstetrics & Gynecology, St. Louis

15: 595-746 (May) 1928

Sex Differences in Pathologic Picture of Syphilis. A. S. Warthin, Ann Arbor, Mich.—p. 593.
Is Vaginal Cesarean Section Justified in Placenta Praevia? E. Essen-Möller, Lund, Sweden.—p. 612.
*Thyroid Gland in Pregnancy: Its Region of Endemic Goiter. W. A. Yoakam, Detroit.—p. 617.
*Premature Separation of Placenta. T. R. Goethals, Boston.—p. 627.
Cases of Carcinoma of Cervix (550) Treated Between 1875 and 1927 at Boston Free Hospital for Women. G. V. S. Smith, R. H. Smithwick and H. Rogers, Jr., Boston.—p. 637.
Pedunculated Cystic Adenomyoma of Uterus Occluding Vagina: Case. E. L. Saylor, Kansas City, Kan.—p. 650.
Roentgen-Ray Treatment of Amenorrhea: Thirty-Eight Cases. I. I. Kaplan, New York.—p. 658.
Iodized Oil and Roentgen Ray as Diagnostic Aid in Gynecology. F. L. Stone, Chicago.—p. 662.

Placenta Praevia: Sixty-Four Cases. L. H. Douglass and I. A. Spiegel, Baltimore.—p. 671.
*Operation for Cure of Procidentia of Uterus. A. E. Hertzler, Halstead, Kan.—p. 675.
Comparative Study of Convalescence of 150 Selected Cases of Vaginal, Supravaginal and Total Abdominal Hysterectomy. C. P. Bauer, Chicago.—p. 680.
*Report on 320 Fetal Postmortems at Chicago Lying-In Hospital. W. B. Serbin, Chicago.—p. 682.
Chronic Endotrachelitis. F. W. Sovak, New York.—p. 686.
Obstetric Inclinometer: New Instrument for Measuring Angulation of Female Pelvic Planes. J. B. Jacobs, Washington, D. C.—p. 689.
Two Cases of Partial Hydatidiform Degeneration of Placenta Late in Pregnancy. E. Allen, Chicago.—p. 694.
Interstitial Tubal Pregnancy: Case. S. di Palma, New York.—p. 699.
Double Vagina as Cause of Sterility: Case. S. L. Siegler, New York. —p. 701.
Torsion of Hydrosalpinx: Case. T. Torland, Seattle.—p. 702.
Hernia of Uterus and Tubes Through Inguinal Canal (Salpingohysterocele): Case. J. Sarnoff, New York.—p. 704.
New Self-Retaining Instrument for Rubin Patency Test and Iodized Oil Instillation. I. F. Stein and R. A. Arens, Chicago.—p. 707.
Cephalic Rotating Forceps. M. N. Moss, St. Paul.—p. 709.
Self-Retaining Lateral Vaginal Speculum for Cervical Work. W. E. Levy, New Orleans.—p. 710.
New Uterine Cannula. W. E. Levy, New Orleans.—p. 712.
Improved Short Obstetric Forceps. D. A. Calhoun, Troy, N. Y.—p. 712.

Thyroid Gland in Pregnancy.—The incidence of goiter, 60 per cent, found by Yoakam in a series of pregnant women in Detroit compares closely with the results obtained in goiter surveys made on the general population of Michigan. The high incidence of congenital goiter, 60 per cent, in infants of mothers who did not receive iodine prophylaxis corresponds closely to the general incidence of goiter in Michigan, and suggests that endemic goiter may have its origin in intra-uterine life. Measurement of the neck during pregnancy, as a means of determining enlargement of the thyroid gland, was found to be less accurate than palpation of the isthmus and estimation of its thickness in centimeters. Iodine salt was found to be an ideal prophylactic agent in patients with normal or only slightly enlarged thyroid glands, but it is believed that additional iodine is advisable when visible symmetrical enlargements of the thyroid exist. In some of the larger colloid goiters with an apparent increase in the size of the gland during pregnancy, prophylactic iodine caused a perceptible and prompt decrease in size, without further increase during gestation. Before the introduction of iodine salt into Michigan, and with 64 per cent of the mothers receiving sodium iodide prophylactically during pregnancy, 35 per cent of the new-born infants had congenital goiter. When no iodine was given, the incidence of congenital goiter increased to 60 per cent. Following the introduction of iodine salt, the incidence of congenital goiter was reduced to 4 per cent.

Premature Separation of Placenta.—Premature separation of the placenta occurred once in every ninety-four deliveries at the Boston Lying-In Hospital during eleven years. The fact that it occurred in thirty-nine primigravid patients as compared with eighty-nine multigravidas makes it probable that its incidence is at least as common a complication of primiparous pregnancies and labors as of multiparous. The incidence was slightly more frequent below the age of 30 than at this age and above. Twenty-four and two-tenths per cent of the cases in this series showed a toxemic background; 4.7 per cent were in eclamptic patients. Ablatio occurred once in every twenty-two patients with toxemia delivered during the eleven years. The occurrence of separation four times more frequently in toxemia than in the general series of deliveries points strongly to a toxic element in this type of case which may bear a causative relation to ablatio. The nature of the toxic substance or substances is still undetermined. The maternal mortality in this series was 8.6 per cent; the fetal and neonatal, 61.5 per cent. More mothers died in cases in which uteroplacental apoplexy was present than in those in which it was not. The occurrence of suppression of urine following cesarean section for ablatio in toxemic cases is a complication of the gravest prognosis. Two such cases reported by Goethals resulted fatally.

Operation for Procidentia of Uterus.—Hertzler makes a Pfannenstiel incision and the fundus of the uterus is pulled into the incision. The peritoneum is sutured to the fundus of the uterus throughout its circumference, making the fundus extraperitoneal. An incision is made in the fundus, making a partial flap of the top of the uterus. The lower fascia is drawn into the incision in the fundus thus made throughout its entire length. The edge of the flap formed by the top of the fundus is then sutured to the abdominal fascia from one corner of the uterus to the other. The upper fascial flap is then sutured to the fundus of the uterus, and the edge of the upper fascial flap is sutured to the lower flap. It is necessary to free this fascia from fatty tissue, and it is well to make short nicks into it along the line where the upper flap is to be attached.

Report on Fetal Postmortems.—In a series of 320 fetal autopsies reviewed by Serbin, there were 213 infant deaths and 107 stillbirths, sixty intranatal and forty-seven before labor set in with maceration of the fetus. There were forty-five cases of intracranial hemorrhages in operative deliveries and eighteen in spontaneous deliveries. In sixty-six cases of asphyxia of the new-born with a diagnosis of atelectasis pulmonum, forty-eight babies were premature, five were full-term spontaneous, and thirteen were delivered by cesarean section, one with an enlarged thymus. There were thirteen monsters, seven of which were associated with placental disease; three with deformities of the urogenital apparatus, and two with diaphragmatic hernia. There were two cases of sepsis of the new-born and four cases of pneumonia.

American J. Ophthalmology, Chicago

11: 431-518 (June) 1928

Examination of Fundus Oculi by Light of Limited Spectral Range. M. A. Dobson, London.—p. 431.
Velonoskiascopy. L. W. Morsman, Hibbing, Minn.—p. 433.
Technic of Conjunctivoplasty. E. Szokolik, Szombathely, Hungary.—p. 438.
Birth Trauma to Cornea. E. E. Blaauw, Buffalo.—p. 440.
Reflection Illuminator for Perimetric Studies of Bedridden Patients. J. N. Evans, New York.—p. 444.
Ophthalmic Pathology. G. R. Callender and H. Campbell, Washington, D. C.—p. 447.
Serum Disease and Serum Accidents. F. T. Lord, Boston.—p. 451.
Iridoschisis. C. Hobart, St. Louis.—p. 454.
Sympathetic Ophthalmia with Myopia as Initial Symptom. C. M. Swab, Omaha.—p. 461.
Impressions of European Eye Clinics. L. L. Mayer, St. Louis.—p. 464.
Phlyctenular Conjunctivitis. C. S. O'Brien, Iowa City.—p. 468.
Observations Concerning Streak Retinoscope. J. M. Langdon, Philadelphia.—p. 469.

American J. Public Health, New York

18: 555-704 (May) 1928

Behavior of Lead in Animal Organism: I. R. A. Kehoe and F. Thamann, Cincinnati.—p. 555.
Venereal Disease Clinic. A. J. Casselman, Trenton, N. J.—p. 572.
Health Education Program in City of 100,000. L. F. Bache, Syracuse, N. Y.—p. 581.
Endemic Goiter and Public Health. O. P. Kimball, Cleveland.—p. 587.
Bacterial Flora of Ground Market Meats: Outbreak of Food Poisoning Probably Due to Crabmeat. J. C. Geiger, Berkeley, Calif., F. E. Greer and J. L. White, Chicago.—p. 602.
*Bacterium Abortus Infection in Man. J. G. McAlpine, Storrs, Conn., and F. L. Mickle, Hartford, Conn.—p. 609.
Age Distribution of Communicable Disease According to Size of Community. E. S. Godfrey, Jr., Albany, N. Y.—p. 616.

Bacterium Abortus Infection in Man.—McAlpine and Mickle tested 10,157 samples of human serums which were submitted for the Wassermann examination by the agglutination reaction using *Bacterium abortus* as the antigen. Of this number, approximately 0.6 per cent gave reactions up through the 1:100 dilution. These results, obtained in a state in which preliminary testing has shown at least 90 per cent of the dairy herds to be infected with *B. abortus* and approximately only 60 per cent of the milk to be pasteurized, indicate that infection of man with the bovine type of *B. abortus* is relatively rare, provided any significance can be attached to the agglutination test. Attempts to follow the small number of cases reacting through the 1:100 dilution by the agglutination test were made through questionnaires, subsequent testing and blood cultures. This method was unsatisfactory on the whole, as many of the patients remained under the care of the attending physicians for only a short time.

Archives of Internal Medicine, Chicago

41: 615-768 (May) 1928

*Iodine Compounds: Selective Absorption by Hyperplastic Thyroid Gland of Dog. H. B. Van Dyke, Chicago.—p. 615.
*Effect of Ephedrine on Minute Cardiac Output of Normal Dogs. C. P. Wilson, C. Pilcher and T. R. Harrison, Nashville, Tenn.—p. 622.
*Duodenal Ulcer: Behavior of Stomach and Duodenum in Presence of Pain. M. J. Wilson, Toronto.—p. 633.

*Renal Function Tests with Sodium Thiosulphate and Sodium Iodide. A. Bolliger, Detroit.—p. 642.
*Effect on Basal Metabolism of Ligating Lower Extremities. A. Topper and H. Mulier, New York.—p. 655.
Correlation of Basal Metabolic Rate and Basal Pulse Rate. J. H. Smith, Richmond, Va.—p. 663.
*Determination of Cardiac Hypertrophy by Roentgen-Ray Methods., J. A. E. Eyster, Madison, Wis.—p. 667.
*Roentgen-Ray Treatment of Spleen in Asthma and in Related Allergic Diseases. G. L. Waldbott, Detroit.—p. 683.
Coarctation of Aorta: Eight Cases: Review of Literature. L. M. Blackford, Rochester, Minn.—p. 702.
*Chondroma of Spine Associated with Transverse Myelitis. J. Felsen, New York.—p. 736.
*Reciprocal Rhythm: Associated with Auricular Tachycardia with Partial A-V Dissociation and Atrioventricular Bradycardia. W. Dock, Stanford University, Calif.—p. 745.
*Experimental Obstructive Jaundice: II. Modification of Parathyroid Tetany Mechanism in Jaundice. W. C. Buchbinder and R. Kern, Chicago.—p. 754.

Absorption of Iodine by Hyperplastic Thyroid.—An attempt was made by Van Dyke to determine quantitatively the rates at which the hyperplastic thyroid gland of the dog selectively absorbs various iodine compounds. Thyroxin iodine is very slowly taken up, while free iodine is absorbed relatively more rapidly. Iodate iodine is bound quickly by such glands but apparently not so quickly as iodide iodine, which is selectively absorbed by the hyperplastic gland more rapidly than any of the iodine compounds studied. The selective absorption of iodine, iodate and iodide iodines is unaffected by complete bilateral ligation of the suprarenal glands six or seven hours previously.

Effect of Ephedrine on Cardiac Output.—Wilson et al. state that ephedrine given intravenously to normal dogs usually causes an immediate increase in the minute cardiac output, which lasts fifteen minutes or longer. If the drug is given subcutaneously the action is more uniform and of a greater degree, developing within fifteen minutes and lasting forty-five minutes or longer. If it is given orally an increase develops after thirty minutes and lasts about an hour. In normal dogs the pulse rate is slowed after the intravenous and subcutaneous administration of ephedrine. The subcutaneous method of administration of ephedrine for its effect on the circulatory mechanism is probably the most suitable, although the oral method gave the highest average in the few experiments performed. Ephedrine is of value as a cardiac stimulant.

Duodenal Ulcer: Relation of Gastric Peristalsis to Pain.—Observations made by Wilson indicate that the presence or absence of gastric peristalsis does not bear any relation to the occurrence of pain in duodenal ulcer. The pain is nearly always relieved by squeezing the gastric contents into the duodenal caput. It is not directly due to the acidity of the gastric contents. The relief from pain is due to relaxation of the musculature of the duodenal caput. The pain is due to sustained contraction of the duodenal caput.

Comparison of Renal Function Tests.—A combination of three renal function tests, consisting of the sodium thiosulphate test, the sodium iodide test and the phenolsulphonphthalein test, was studied experimentally by Bolliger. It was applied to normal, pregnant and nephritic dogs and to dogs with extrarenal lesions. The sodium thiosulphate test was found to be a specific quantitative test for experimental renal insufficiency; it gives essentially the same information as the phenolsulphonphthalein test. It is also somewhat more accurate and may better detect slight lesions in the kidneys. Pregnant dogs show a depression in the sodium thiosulphate output. The two hour sodium iodide test was of little value in tests of renal function.

Effect of Ligating Lower Extremities on Basal Metabolism.—In a series of experiments performed on themselves, Topper and Mulier found that when the lower extremities are cut off from the general circulation by ligation, the basal metabolism is decreased by an amount which roughly corresponds to the mass thus occluded and not to the surface area. When the ligature was removed, the level of the basal metabolism rose to normal. This work was a repetition of work originally done by Helmreich, and the authors' observations are in accord with his observations.

Roentgenographic Determination of Cardiac Hypertrophy.—Eyster asserts that a comparison of the area of the orthodiagram of the frontal plane with the predicted area, with age, height and weight being used as variables, affords the best separation so far employed in differentiating between normal and hypertrophic hearts.

Roentgen-Ray Irradiation of Spleen in Asthma.—Eighty-one patients with asthma and associated allergic conditions were treated by Waldbott with small doses of roentgen ray over the spleen. Eighteen of fifty-six children became symptom-free; sixteen were temporarily relieved, and twenty-two did not respond to the treatment. Three of twenty-five adults became symptom-free; nine were temporarily relieved, and thirteen were not improved. Patients less than 4 years of age showed the best results, and the treatment in patients more than 30 years of age was less effective. Patients affected simultaneously with tuberculosis and the chronic emphysematous type of asthma did not respond to the treatment. In cases of infantile eczema and an hypertrophying thymus, the condition did not improve. The best results were seen among the patients with a beginning allergic condition manifested by allergic bronchitis. Better results were obtained among patients with asthma who were sensitive to bacteria than among those sensitive to food, pollen and emanation. In some patients who improved, the positive skin tests became negative within the first week after the treatment. Thirty-seven of a total of 169 exposures were followed by reactions characterized by vomiting, nausea, abdominal pain or an asthmatic attack from one to five days after the treatment. Better results were encountered among these patients. The value of the treatment is discussed, and warning is given against its indiscriminate use. The opinion is expressed that it should be applied only in cases of allergy in which the patients do not respond to the ordinary methods.

Chondroma of Spine with Transverse Myelitis.—Felsen advises that persistent arsenical treatment of a negro with symptoms pointing to a lesion of the spinal cord should be avoided without preliminary roentgenographic studies of the spine. A case of chondroma of the spine associated with transverse myelitis is described. The slow development and benign character of the tumor suggest that even delayed surgical measures may be consistent with cure.

Reciprocal Rhythm Associated with Auricular Tachycardia.—A case of atrioventricular rhythm is reported by Dock in which retrograde conduction and reciprocal rhythm were present, and in which left bundle branch block occurred at times in the reciprocal beat. The first period of nodal rhythm, followed twenty-two days of paroxysmal auricular tachycardia with partial heart block; it lasted four days, and the rhythm gradually reverted to normal. Nodal rhythm recurred in eight days and continued for the six days that the patient remained under observation. The effects of vagal pressure and of the administration of atropine were observed.

Experimental Obstructive Jaundice.—Indirect evidence is presented by Buchbinder and Kern of a functionally or structurally altered mechanism of tetany in obstructive jaundice. This is threefold and is based on: (*a*) the response of the thyroparathyroidectomized animal; (*b*) the relief of tetany by the intravenous injection of bile, and (*c*) the absence of tetany in late obstructive jaundice in puppies in which the blood serum calcium may reach the tetany level. It is thought that the threshold of nervous excitability is raised in obstructive jaundice. This is in harmony with the belief that bile acts as a depressant for the central nervous system, concerning which there has been almost unanimity of opinion.

Archives of Otolaryngology, Chicago

7: 415-552 (May) 1928

Physical Causes of Deafness: Report of Committee, Division of Medical Sciences, National Research Council: I. Method of Study. C. W. Richardson, Washington, D. C.—p. 415.
Id.: II. Statistical Studies of Children in Public Schools for Deaf. G. E. Shambaugh and Others, Chicago.—p. 424.
Use of Iodized Oil in Diagnosis of Nasal Sinus Disease: II. H. Anderson and C. MacDougal, Duluth, Minn.—p. 514.
Mastoid Puncture in Infants. I. Friesner and S. Rosen, New York. —p. 524.
Circuit Plans for Inexpensive Audiometers. D. MacFarlan, Philadelphia. —p. 527.
Diagnosis of Lateral Sinus Thrombosis Contradictory to Results of Tobey and Ayer. S. J. Kopetzky, New York.—p. 532.

Canadian M. Association Journal, Montreal

18: 495-648 (May) 1928

Genesis of Gastric Ulcer. E. M. Eberts, Montreal.—p. 495.
*Renal Aplasia and Hypoplasia: Factor in Renal Surgery. D. W. MacKenzie and A. B. Hawthorne, Montreal.—p. 502.
Sarcoma of Prostate Gland: Two Cases. R. E. Powell, Montreal. —p. 509.
Benign Mixed Tumors of Kidney. M. C. Watson, Toronto.—p. 511.
Types of Renal Disease: Therapeutic Suggestions. N. M. Keith, Rochester, Minn.—p. 515.
*Carotinemia and Diabetes. I. M. Rabinowitch, Montreal.—p. 527.
Heart in Hyperthyroid Disease. J. Brodie, Winnipeg, Man.—p. 531.
*Malaria Inoculation and Tryparsamide in Cerebrospinal Syphilis and General Paralysis. C. A. Porteous and E. C. Menzies, Verdun, Que.—p. 536.
Advance of Diagnosis in Relation to Duodenal Ulcer. R. W. McQuay, Toronto.—p. 543.
Serous Meningitis. G. F. Boyer, Toronto.—p. 546.
Idiopathic Hemorrhage of New-Born. J. L. McCollum, Toronto.—p. 550.
Nervous Child. W. L. Denney, London, Ont.—p. 555.
*Diabetes Mellitus Becomes Atypical Renal Glycosuria. E. H. Mason, Montreal.—p. 557.
Atrophy of Subcutaneous Fat Following Insulin Injections. Eight Cases. I. M. Rabinowitch, Montreal.—p. 560.
Acute Intestinal Obstruction in Infants: Two Cases in Siblings. J. C. S. Battley, London, Ont.—p. 562.
Modern Method of Prescribing. O. S. Gibbs, Halifax, N. S.—p. 565.
Bacteriologic Studies in Chronic Ulcerative Colitis. E. MacNaughton, Montreal.—p. 568.
*Ulcerative Colitis Associated with Bullous Skin Eruption. W. P. Warner, Welland, Ont.—p. 571.
Chylous Cyst of Mesentery: Traumatic Thrombosis of Mesenteric Vessels. W. H. Lang, Vancouver, B. C.—p. 573.
*Congenital Malformation of Gastro-Intestinal Tract. A. B. LeMesurier and F. F. Tisdall, Toronto.—p. 576.
Case of Abdominal Torsion of Great Omentum. E. B. Chandler, Montreal.—p. 579.
Bacillus Calmette-Guérin (B C G) in Prophylactic Immunization in Children: S. A. Petroff and A. Branch, Trudeau, N. Y.—p. 581.
Development of Knowledge Concerning Tuberculosis: C. H. Vrooman, Vancouver, B. C.—p. 594.
Examination of Spinal Fluid in Diagnosis. L. C. Montgomery, Montreal. —p. 599.

Renal Aplasia and Hypoplasia.—MacKenzie and Hawthorne assert that aplasia of the kidney occurs frequently enough to be borne in mind when one is considering a nonfunctioning or very low functioning kidney. It appears to be more common on the left side. Pain is occasionally referred to the side of the aplastic kidney. Kidney operations should not be undertaken without previous cystoscopic examination, and without complete evidence of the existence of a second kidney.

Carotinemia and Diabetes.—In only fifty-nine of 1,014 diabetic patients studied by Rabinowitch was there a suggestion of an excess of carotin. Of the fifty-nine patients in whom there was excess pigment, thirteen had never been on any special vegetable diets prior to these tests. As a matter of fact, eight of these never knew that they had diabetes until some other condition led to their admission into the hospital, when glycosuria was first discovered. Of these fifty-nine patients, forty-four required insulin. Of the forty-four patients, in eleven instances hyperglycemia was difficult to control; six had raised renal thresholds for sugar, and four had insulin-edema. Thirty-six patients showed some evidence of arteriosclerosis. In fact, four had gangrene of the extremities. Hypercholesterolemia was a marked feature. It is suggested that xanthosis in diabetes mellitus is of more clinical importance than has generally been thought. It suggests an unfavorable prognosis.

Malaria Inoculation and Tryparsamide in Cerebrospinal Syphilis.—In forty unselected cases of cerebrospinal syphilis reported by Porteous and Menzies, satisfactory arrests were achieved in sixteen following malaria inoculation. Optic atrophy occurred much less frequently than in a series of patients treated with tryparsamide.

Diabetes Mellitus Becomes Atypical Renal Glycosuria.—In a case reported by Mason the typical symptoms of diabetes mellitus were seen when the patient was first admitted to the hospital. Subsequently, renewed observations indicated that a state of atypical renal glycosuria had developed. The relevant conditions found at autopsy are reported.

Ulcerative Colitis Associated with Bullous Skin Eruption.—Six cases of chronic ulcerative colitis are described by Warner. From each of these pure cultures of gram-positive diplococci were obtained, which corresponded with the type of diplococcus described by Bargen. There is still doubt as to whether this organism is the cause of chronic ulcerative colitis, but the results obtained by the use of vaccines prepared from cultures of it are encouraging.

Congenital Malformation of Gastro-Intestinal Tract.—The case cited by LeMesurier and Tisdall was not one of situs inversus with the whole body presenting, as it were, the mirror image of what it should be. The heart was in its proper position on the left side, and, as far as could be made out, the abnormality was limited to the alimentary canal and to those organs connected with it in the course of its development. The fault seemed to be primarily one of rotation. Commencing with the stomach, the rotation was the reverse of the normal process, and its greater curvature, which was at first posterior, passed to the right instead of to the left. The spleen, developing in the dorsal mesogastrium, came to lie on the right side. The liver, instead of being pushed by the stomach to the right and failing to develop in its left half, had developed about evenly on the two sides. The small bowel had entered the lesser sac through an abnormally large foramen of Winslow, probably at the time of its return from the umbilical loop, and with the stomach had apparently so filled the right side of the abdomen that the normal rotation of the colon to the right had been interfered with and the superior mesenteric artery had not been carried across the duodenum. The origin of a velum and kink at the duodenojejunal junction was not clear, but the obstruction so produced was obviously the cause of the distention of the stomach and duodenum with the resultant vomiting.

Indiana State M. Association Journal, Fort Wayne

21: 185-232 (May) 1928

Ten Years of Rabies in Indiana. T. B. Rice, Indianapolis.—p. 185.
Better Obstetrics. C. O. McCormick, Indianapolis.—p. 191.
Rupture of Intestine Without External Wound. J. K. Berman, Indianapolis.—p. 198.
Adequate Laboratory Service in Small Hospital. B. W. Rhamy, Fort Wayne.—p. 201.
Traumatic Rupture of Spleen and Kidney. M. F. Porter, Fort Wayne. —p. 203.
Occupational Therapy and Prescription. W. Conrick, Indianapolis.—p. 204.
Early Diagnosis of Pulmonary Tuberculosis. E. O. Otis, Boston.—p. 205.

Iowa State M. Society Journal, Des Moines

18: 159-200 (May) 1928

"And the Cause I Knew Not, I Searched Out." N. Walker, Edinburgh. —p. 159.
Case of Memory Loss Followed by Complete Recovery. J. M. Dorsey, Iowa City.—p. 165.
Feeblemindedness: Comparison of Classifications. R. C. Doolittle, Des Moines.—p. 169.
Pulmonary Tuberculosis Complicated by Syphilis: Case. G. W. Koch, Sioux City.—p. 175.
Types of Colonic Fecal Outlets. C. J. Drueck, Chicago.—p. 181.
Argyria: Case. H. A. Collins, Des Moines.—p. 183
Ileorectostomy: Without Use of Sutures or Mechanical Button. W. A. Stoecks, Davenport.—p. 184.

Journal of Infectious Diseases, Chicago

42: 435-524 (May) 1928

Spermatocyte Reaction (Testicular Tuberculin Reaction) in Albino Rat. J. E. Blair, New York.—p. 435.
Placental Transmission of Bacteriophage. J. E. Blair, New York, and D. L. Reeves, Stanford University, Calif.—p. 440.
Flattened Capillary Tubing for Microscopic Examination of Cultures. W. S. Sturges, Omaha.—p. 444.
Motility of Clostridium Bifermentans. W. S. Sturges and E. T. Drake, Omaha.—p. 446.
Search for Protective, Bacteriophagic and Enzymatic Agents in Pneumonic Sputums. B. E. Eddy, Cincinnati.—p. 449.
Action of Bacteriophage in Producing Filtrable Forms and Mutations of Bacteria. M. Frobisher, Jr., Baltimore.—p. 461.
Toxic Effects of Amines. A. R. Johnston, Cincinnati.—p. 473.
Investigation of Reliability of Sputum Typing for Pneumococcus by Mouse Method. W. D. Sutliff, New York.—p. 485.
Effect of Reduced Oxygen Tensions on Growth of Clostridium Botulinum (Type A) in Veal Infusion Broth. G. M. Dack and M. M. Baumgartner, Chicago.—p. 491.
Gas Production from Commercial Peptones by B. Aerogenes and B. Coli. E. L. Treece, Lawrence, Kan.—p. 495.
Sanitary Significance of Lactose-Fermenting Bacteria Not Belonging to B. Coli Group: I. Groups Reported in Literature and Isolated from Water in Chicago. F. E. Greer, Chicago.—p. 501.
Id.: II. Number of Lactose-Fermenting Organisms Found in Chicago Sewage and Chicago Water Supply. F. E. Greer, Chicago.—p. 514.

Journal of Urology, Baltimore

19: 527-655 (May) 1928

Transplantation of Ureter. C. M. McKenna, Chicago.—p. 527.
Extraperitoneal Reimplantation of Ureter into Bladder. J. E. Burns, Kansas City, Mo.—p. 541.
Albumin, Fibrin and Bacterial Stones of Urinary Tract. A. Hyman, New York.—p. 551.
Phleboliths, Possible Cause for Lower Abdominal Pain. J. R. Dillon and B. A. Cody, San Francisco.—p. 563.
Genesis, Morphology and Surgery of Prostatic Middle Lobe Hypertrophy. A. Randall, Philadelphia.—p. 569.
Part That Obstruction of Ureter Plays in Outcome of Cancer of Bladder. A. L. Chute, Boston.—p. 577.
Technic of Uretero-Enterostomy. G. G. Smith, Boston.—p. 583.
Ureterovaginal Fistula. J. D. Barney, Boston.—p. 591.
Multiple Fractures of Pelvis with Rupture of Bladder. H. G. Bugbee, New York.—p. 599.
Rupture of Bladder in Child. J. R. Caulk, St. Louis.—p. 603.
Etiology of Spermatocele. H. C. Rolnick, Chicago.—p. 613.
Electrotherapeutic Principles and Indications in Urology. V. C. Pedersen, New York.—p. 619.
Electrocoagulation of Vesical Neoplasms Under Water with Adjustable Electrode. G. Timberlake, St. Petersburg, Fla.—p. 629.
New Cysto-Urography Table. F. E. B. Foley, St. Paul.—p. 637.
New Epididymitis Clamp for Diathermy. A. Crance, Geneva, N. Y. —p. 647.
New Forceps for Removal of Ureteral Calculi. W. C. Stirling, Washington, D. C.—p. 651.

Nebraska State M. Journal, Norfolk

13: 161-200 (May) 1928

Some Feeding Problems During First Year of Life. H. M. Jahr, Omaha.—p. 161.
General Practitioner's Laboratory. L. Stark, Norfolk.—p. 165
Preparation of Prostatic to Minimize Surgical Risk. A. D. Munger, Lincoln.—p. 169.
Indications for Surgical Treatment of Toxic Goiter. D. C. Hilton, Lincoln.—p. 171.
Case of Undulant Fever. M. C. Howard, Omaha, and W. J. Reeder, Cedar Rapids.—p. 173.
Basic Science Laws. H. H. Waite, Lincoln.—p. 175.
Dementia Praecox. M. Grothe, Lincoln.—p. 179.
Skull Fractures: Classification and Complications. R. L. Schroeder, Omaha.—p. 181.
Early Diagnosis of Pulmonary Tuberculosis. G. B. Webb, Colorado Springs.—p. 187.

New England J. Medicine, Boston

198: 661-714 (May 17) 1928

Conservatism in Renal Surgery. J. D. Barney, Boston.—p. 661.
*Two New Signs Suggestive of Cauda Equina Tumor. H. R. Viets, Boston.—p. 671.
Aneurysmal Phthisis: Case. R. Clifford, Boston.—p. 674.
*Classification of Asthma. M. H. Kahn, New York.—p. 676.
Relation of Acute Respiratory Infections to Atmospheric Conditions. C. L. Brown and G. P. Grabfield, Boston.—p. 679.
Electrical Treatment (Galvanic Current) of Hypertrophic Rhinitis. L. Feldman, Boston.—p. 682.
*Inflammation Involving Islands of Langerhans in Diabetes: Observations. O. H. Stansfield, Worcester, Mass., and S. Warren, Boston. —p. 686.
*Spontaneous Idiopathic Hemopneumothorax. L. M. Hurxthal, Boston. —p. 687.
Spirochetes and Fusiform Bacilli in Sputum: R. B. King and H. G. Dacey, Boston.—p. 689.

Diagnosis of Cauda Equina Tumor.—Root pain on jugular compression and shifting of the iodized oil shadow on change of posture are reported by Viets as being new diagnostic signs of cauda equina tumor. In the case cited, the patient had pain in the right leg and back for five months; stiffness of the lumbar spine; partial dynamic and chemical "block" of the spinal fluid; root pain on jugular compression and shifting of the iodized oil shadow on change of posture. Removal of a tumor of the right second lumbar posterior root was followed by recovery.

Classification of Asthma.—Kahn classifies asthma as: (1) laryngotracheal or obstructive asthma; (2) essential bronchial asthma; (3) pulmonary or stasis asthma, and (4) respiratory center asthma—so-called cardiac asthma. Special emphasis is placed on the distinction between pulmonary asthma, which is due to passive congestion in the pulmonary capillaries, and respiratory center asthma, which has formerly been called cardiac asthma.

Inflammation of Islands of Langerhans in Diabetes Mellitus.—Both the patients reported on by Stansfield and Warren were children, aged 6 and 11 years, respectively. One died after a two months' illness; the other was ill only one month. The diagnosis of diabetes was not made until after death. It was based on the examination of the islands of Langerhans in the pancreas. The pathologic changes in both cases suggested a causal relationship between the inflammation in the pancreas and the diabetes.

Spontaneous Idiopathic Hemopneumothorax.—A patient with spontaneous hemopneumothorax, reported on by Hurxthal, showed abdominal rigidity. There was a massive hemorrhage of from 3 to 4 liters of blood into the pleural cavity. The blood was aspirated and air was reinjected. There was no definite evidence of tuberculosis. The patient recovered.

New Jersey M. Society Journal, Orange

25: 325-396 (May) 1928

Diathermy. N. E. Titus, New York.—p. 325.
Physical Therapeutics. W. Martin, Atlantic City.—p. 330.
Clinical Interpretation of Widal Reaction. R. A. Kilduffe, Atlantic City. —p. 334.
Gastric Ulcer. G. Blackburne, Newark.—p. 338.
Fractures. P. M. Mecray, Camden.—p. 341.
Id.: Open Operation. W. J. Barrett, Camden.—p. 343.
Id.: Nonoperative Treatment. I. E. Diebert, Camden.—p. 345.
Id.: End-Results. A. S. Ross, Camden.—p. 347.
Meckel's Diverticulum as Cause of Intussusception. D. B. Allman, Atlantic City.—p. 352.

New York State J. Medicine, New York

28: 555-630 (May 15) 1928

Acute Cranial and Intracranial Injuries. M. M. Peet, Ann Arbor, Mich. —p. 555.
*Results of Malaria Treatment of General Paralysis. H. L. Levin, Buffalo.—p. 562.
Investigation of Urologic Patient. J. D. Olin, Watertown.—p. 565.
Urinary Disturbances in Women. 700 Cases. F. T. Lau and J. K. de Vries, New York.—p. 567.
Surgical Treatment of Pulmonary Tuberculosis. E. W. Phillips, Rochester, N.Y.—p. 576.
Undulant Malta Fever: Case. H. B. Gillen, Cohoes, and H. C. Gordinier, Troy.—p. 581.
Perinephritic Abscess in Children. A. G. DeSanctis, New York, and H. A. Reisman, Jamaica.—p. 584.

Results of Malaria Treatment of General Paralysis.—Of 100 cases of general paralysis treated with malaria by Levin, without subsequent antisyphilitic treatment, complete remissions resulted in twenty-six; in ten there were partial remissions; in fourteen there was improvement; in twenty-one there was no improvement, and twenty-nine terminated fatally. A total of 50 per cent were benefited by the treatment. The durations of the complete remissions to date extend from four months to thirty-one months. The grandiose or expansive type of general paralysis offers the best progress, 84 per cent of the cases of this variety showing definite improvement subsequent to the malaria injections. The prognosis in the demented and the agitated types is much more dubious, the improvement rates being 45 per cent and 33 per cent, respectively. The duration of the psychoses prior to treatment bears a distinct relationship to the improvement rate. The best results were obtained with the patients whose psychoses were of less than four months' duration. Sixty-eight per cent of this group were benefited, as compared with 35 per cent in whom the disease lasted a year or more. Males seem to respond to treatment better than do females. The total improvement rate of the males was 53 per cent, of the females 36 per cent. There is no distinct correlation between the clinical and the serologic observations subsequent to malaria treatment.

Public Health Reports, Washington, D. D.

43: 1067-1121 (May 4) 1928

Causes of Illness at Different Ages: Hagerstown Morbidity Studies VII. E. Sydenstricker, Washington, D.C.—p. 1067.

43: 1123-1197 (May 11) 1928

Incidence of Various Diseases According to Age: Hagerstown Morbidity Studies VIII. E. Sydenstricker, Washington, D.C.—p. 1124.

43: 1199-1257 (May 18) 1928

Full-Time County Health Program Developed in Mississippi Valley Following Flood. J. G. Townsend, Washington, D.C.—p. 1199.

Radiology, St. Paul

10: 365-452 (May) 1928

Intensity of Radiation in Vicinity of Filtered Radon Implants. E. H. Quimby, New York.—p. 365.
Surgery and Roentgen Ray in Treatment of Carcinoma of Breast. U. V. Portmann, Cleveland.—p. 377.

Some Neglected Points in Pathology of Breast Cancer: Treatment. D. T. Quigley, Omaha.—p. 383.
Review of Eighty Cases of Cancer of Breast. M. M. Roland, Oklahoma City.—p. 389.
Radiologist and His Ethics. G. Perry, Rhinelander, Wis.—p. 396.
Dental Infections. W. A. Price, Cleveland.—p. 407.
Diagnosis of Early Infections in Pleural Cavity, Especially in Lungs. W. H. Wallace, New York.—p. 425.
Urography: Common Diagnostic Errors. M. B. Wesson, San Francisco. —p. 431.
Carcinoma of Splenic Flexure of Colon. J. A. Evans and E. T. Evans, La Crosse, Wis.—p. 438.

10: 453-542 (June) 1928

Roentgen-Ray Therapy in Nonmalignant Skin Lesions. W. H. Guy, Pittsburgh.—p. 453.
Treatment of Rectal Cancer. G. E. Binkley, New York.—p. 457.
Safety Standards of Protection Against Roentgen-Ray Dangers. A. Mutscheller, New York.—p. 468.
Engineering Roentgen-Ray Department. B. H. Arnold and A. M. Obriecht, Chicago.—p. 477.
Effects of Carbon Arc Radiation on Blood and Circulatory System. H. Laurens, New Orleans.—p. 492.
Liver Measurement: Comparative Study on Relation of Chronic Gallbladder Disease to Size of Liver. M. Feldman, Baltimore.—p. 496.
Roentgen-Ray Analysis of Bone Disease. S. C. Barrow, Shreveport, La. —p. 500.
Potter-Bucky Table Adapted for Multiple Exposures. H. K. Taylor, New York.—p. 506.
Ankylosis of Joints: Case. J. L. Harvey, Denver.—p. 510.
New Method of Using Bucky-Potter Diaphragm with Some Advantages. W. S. Lawrence, Memphis, Tenn.—p. 511.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 743-788 (May 5) 1928

*Intrinsic Cancer of Larynx, Operated on by Laryngofissure: Immediate and Ultimate Results. S. C. Thomson.—p. 743.
*Anastomoses Between Recurrent Laryngeal and Phrenic Nerves. L. Colledge and C. Ballance.—p. 746.
Operation for Pituitary Tumor: Case. A. Watt, R. C. J. Meyer and A. Campbell.—p. 747.
*Affinities Between Rheumatism and Tuberculosis. W. C. Wilkinson. —p. 749.
Endocrine Imbalance: Relation to Chronic Arthritis. G. L. K. Pringle. p. 751.
*Seasickness: Treatment. R. A. Bennett.—p. 752.
Fatal Suppression of Urine Caused by Latent Hemagglutinins. G. Shera. —p. 754.
Vaccines in Treatment of Gonorrhea. E. D. McCrea.—p. 755.
Complete Inversion of Uterus: Recovery. D. M. Donovan.—p. 756.
Identification from Finger Tip Removed by Bite. S. Smith.—p. 757.
Embolus of Superior Mesenteric Artery. H. J. Selby.—p. 757.
Recovery from Tetanus. G. Lowe.—p. 757.

Laryngofissure for Larynx Cancer.—Of the seventy-four laryngofissures performed by Thomson on seventy patients (two of the seventy having been operated on for a local recurrence and two requiring a supplementary laryngofissure), two resulted fatally within forty-eight hours of the operation. Of thirty-four patients alive today, thirty-two have survived periods varying from three to nineteen years from the date of operation.

Laryngeal and Phrenic Nerve Anastomoses.—According to Colledge and Ballance, the proper operation to perform in man in cases of paralysis of a vocal cord is recurrent laryngeal-phrenic nerve end-to-side anastomosis. This was successful in the one case in which this operation was carried out. Independent of the cases in man in which by stab or gunshot wound, or during an operation, the recurrent laryngeal nerve has been divided, and in which an immediate anastomosis should be effected, the authors are of the opinion that if a vocal cord (or cords) has been paralyzed for three months without sign of improvement in the condition, a recurrent laryngeal-phrenic nerve anastomosis should forthwith be carried out.

Affinities Between Rheumatism and Tuberculosis.—Wilkinson contends that many so-called cases of rheumatism are really pains and aches caused by hidden foci of tuberculosis. Among other manifestations, tuberculosis may cause lesions suggesting rheumatism of the joints with painful swellings, in some cases with erythema nodosum, in others with erythema pains also in the muscles and in one or more joints, pains in the chest without signs of pleurisy, pains in the neck and in the eyes or head, disturbances of the heart's rate and rhythm, and pains even in the nerves (sciatica). Libermeister has demonstrated the presence of these chronic inflammatory lesions, notably in the lymphatic glands and serous membranes, and even in the meninges and the lungs, liver, kidney, spleen, veins, skin, eyes and larynx. These lesions may be responsible for the various symptoms that may and do occur and pass away in the early stages of chronic tuberculosis, especially chronic apical tuberculosis. For many years Wilkinson has observed pains in special muscles and joints, time after time in the same part after each dose—in the hip, knee, little finger, thumb, or heel; in the back or shoulder; in bones or muscles, such as severe cramps in the calves of the legs, and in the epigastrium, causing the patient to double up after each dose. Boring, lancinating or cutting pains in the shoulder radiating down the arm, or deep pain have also been observed in the chest. These pains, in fact, may be related to chronic inflammatory lesions and may be really focal reactions. One has great opportunities for studying these pains, their varieties and situations, after injections of tuberculin. Tuberculosis may not be the exclusive cause of these chronic inflammatory states, but certainly the symptom-complex hitherto associated with "rheumatism" may be the effect of tuberculosis.

Treatment of Seasickness.—Bennett reviews the various forms of treatment in vogue. In cases in which the exhaustion is becoming dangerous, he keeps the patient in a warm salt water bath—temperature from 90 to 95 F.—for half an hour, an hour, or longer. The relief is great and remarkably prompt; it cannot be ascribed to the general sedative effect but to the mechanical changing of the patient's environment. The specific gravity of the water is 1.020, and the body is supported very lightly on the buttocks, the shoulders, and the back of the head, with the toes just touching the end of the bath to prevent the legs from floating free. The bath itself shares the rolling and pitching of the ship, but the water it contains has not time to respond, and keeps its level, with the patient immersed in it partaking of its relative immobility. The patient must not be able to see the apparent oscillation of the water, and the eyes should be bandaged — voluntary shutting is not enough, since in many cases vertigo is increased by the effort of closing the eyelids. If this procedure is carefully followed, it always lessens the dizziness and gives relief, which is valuable in severe cases and often permanent.

Edinburgh Medical Journal

35: 237-300 (May) 1928

Intracranial Osteophytes. D. M. Greig.—p. 237.
Children of Poor in Town and Country: Application of Some Anthropometric Measurements. A. M. T. Murray.—p. 261.
*Hereditary Hemorrhagic Telangiectasia with Recurring Hematuria. W. E. Foggie.—p. 281.

Hereditary Hemorrhagic Telangiectasia with Hematuria.—Foggie reports the case of a woman, aged 47, who for the past twenty years had suffered from recurring attack of hematuria. She was a member of a family which for five generations had had bleeding from the nose and associated nevoid spots on the skin and mucous membranes. In her case there was only one spot on the lip and the epistaxis appeared late in life. On the other hand, there was bleeding from the urinary tract which was in every respect comparable to the bleeding from the nose. This symptom has not been noted before in these cases.

Glasgow Medical Journal

109: 353-416 (May) 1928

Debt of Modern Medicine to Seventeenth and Eighteenth Centuries. J. D. Comrie.—p. 353.
Early Diagnosis of Diseases of Central Nervous System in General Practice. D. K. Adams.—p. 367.
*Analysis of Cases Showing Extrasystoles. A. A. F. Peel.—p. 376.

Analysis of Cases Showing Extrasystoles. — Analyzing 154 cases, Peel found that extrasystoles are not confined to patients with organic cardiac disease, but are about twice as frequent in its presence as in its absence. Of patients without an organic cardiac lesion about one third show disease changes which are liable to lead to organic cardiac changes; a small proportion show some other disease, and about one half do not show any disease. The organic cardiac lesions most frequently associated with extrasystoles are those of noninfective origin, which yield about two fifths of the total cases, hyperpiesis being present in one fourth. The infective cardiac lesions form one

fourth of the total cases; of these one third are acute and two thirds are chronic. While certain clinical conditions do not appear to exert any influence on the site of origin of extrasystoles, others appear to increase the liability for extrasystoles to arise in particular situations, although they do not preclude their occasional origin elsewhere. Such conditions are chronic aortic lesions which increase the tendency for extrasystoles to arise in the left ventricle; mitral regurgitant lesions, associated with left ventricular extrasystoles; mitral obstructive lesions, associated with auricular extrasystoles; acute infective processes, associated with a tendency for extrasystoles to arise from multiple foci, and angina pectoris without high blood pressure, particularly associated with auricular extrasystoles. The occurrence of pulmonary complications in cases of chronic valvular disease of whatever type would appear to be associated with an increased liability to right ventricular extrasystoles. On the other hand, toxic or functional causes are more frequently associated with extrasystoles arising in the right ventricle. Apart from the effect of the clinical condition, age and sex produce further modifications in the site of the origin of extrasystoles. Auricular extrasystoles are relatively less frequent in females, and right ventricular extrasystoles are more common below the age of 30 and above the age of 60 in both sexes, while left ventricular extrasystoles are more common between 30 and 50 in both sexes and between 50 and 60 in males; in females at this age right ventricular extrasystoles are considerably more frequent than left.

Lancet, London

1: 897-946 (May 5) 1928

*Purpura of Urinary Tract. F. Kidd.—p. 897.
Experimental Basis of Radium Therapy in Cancer. S. Russ.—p. 903.
*Varicose Ulcers: Treatment by Ultraviolet Ray and Unna's Paste Dressings. D. C. Colebrook.—p. 904.
*Use of Benzyl Cinnamic Ester in Tuberculosis: Method of Jacobson. H. Gainsborough.—p. 908.
Bacteriophage from Cases of Rickets. T. Redman.—p. 909.
Case of Tetanus. S. M. Power.—p. 910.
Case of Epilepsy Cured by Ovariectomy. R. R. S. MacKinnon.—p. 910.

Purpura of Urinary Tract.—Kidd analyzes twenty-four cases. Fourteen cases could be grouped as purpura simplex, eight as purpura recurrens, and two as purpura fulminans. In sixteen cases the purpura was confined to the bladder; in three cases it was present in both bladder and kidneys, and in five cases it was confined to one of the kidneys. Hematuria was present in all—so profuse, alarming and dangerous to life in eight cases that nephrectomy had to be carried out. In two fulminating cases nephrectomy stopped the hematuria, but the patients died of exhaustion or of hemorrhage elsewhere in the course of a few months. In the other six cases nephrectomy stopped the hematuria and the patients' lives were saved. Pain was a marked feature in all the cases in which the bladder was involved. Pain was not complained of in seven out of the eight cases diagnosed as renal. In this regard purpura of the kidney seems to differ from purpura of the bladder. Petechiae and hemorrhage occurred simultaneously in the bladder and kidney in only three cases. Fever was absent in fifteen cases, and in the others was very mild. Wasting was noticeable in only four cases and profound anemia in eight. Eight patients were so desperately ill from loss of blood that nephrectomy was necessary. Two patients had intermittent painful swellings of the points; seven had intermittent attacks of petechiae or bruisings of the skin in various parts of the body; four had attacks of hemorrhage from the bowel, and two had severe hemorrhage from the gums. In three children purpura of the bladder came on shortly after the enucleation of tonsils containing pure cultures of streptococci, but no pus could be detected in the urine. In another the trouble came on the day after the extraction of a number of teeth infected with streptococci. In seven cases roentgen-ray examination of the teeth revealed septic stumps, the removal of which seemed to benefit the patients; in four streptococci were isolated in pure culture from the teeth and the urine. In eight cases the tonsils appeared diseased and were removed, and, in six of these, streptococci were isolated in pure culture from the tonsils and urine. Bacilli of the colon group were isolated in eight cases, usually without pyuria. In nine cases it was possible to isolate cultures of a streptococcus from the urine in the absence of pus, in two associated with bacilli of the colon group. More and more the impression was gained that a peculiar type of streptococcus was the most likely cause for the petechiae, a streptococcus which might reside in the teeth, throat or bowel, and which, by means of poison poured into the blood stream, might attack and injure the walls of the fine capillary blood vessels so as to cause exudation of blood through them.

Treatment of Varicose Ulcer by Unna's Paste.—The effect of irradiation by mercury vapor arcs on the condition and course of healing of varicose ulcers was studied by Colebrook. The effect of the light was markedly inferior to that of the Unna's paste, the most striking difference showing in the ambulant patients, many of whose ulcers had previously healed only with rest in bed. Favorable changes in general character, which were slight or absent in the irradiated ulcers, occurred at an early stage in those dressed with Unna's paste. Relief of symptoms was not obtained during irradiation, but was a marked feature of the cases treated with Unna's paste. The use of rubber sponge compression on the ulcer appeared to be definitely advantageous.

Use of Benzyl Cinnamic Ester in Tuberculosis.—Gainsborough reports that he has noted improvement of some degree from the use of this drug. Benzyl cinnamic ester is one of the constituents of cinnamein, the active principle of balsam of Peru. The two radicals, the cinnamic and the benzyl, together constitute benzyl cinnamic ester. The cinnamic radical hinders the growth in culture of the bacillus of Koch, diminishes the febrile reaction which occurs in a guinea-pig after the injection of tuberculin, and also produces an appreciable leukocytosis after its administration subcutaneously. The benzyl radical, in the form of benzyl alcohol, has a powerful dissolving action on the tubercle bacilli in vitro. Clinically, benzyl cinnamic ester has given some encouraging results in the treatment of pulmonary tuberculosis. Gainsborough has used it with good results in twelve cases, such as tuberculous glands in the neck; tuberculosis of the kidneys with cystitis; tuberculosis of the lungs and larynx; tuberculous iritis and iridocyclitis; lupus vulgaris, and tuberculous perianal abscess. The improvement has been particularly striking in some cases in which the general condition was either poor or definitely becoming worse before this treatment was started.

1: 947-998 (May 12) 1928

Linacre's Influence on English Medicine. G. Newman.—p. 947.
Radium Treatment of Carcinoma of Mouth and Tongue. G. E. Birkett.—p. 953.
*Acute Rheumatism in Childhood. C. J. McSweeney.—p. 959.
Case of Eclampsia Treated with Spinal Anesthesia. R. H. Paramore.—p. 963.
Treatment of Toxic Periarthritis. L. C. D. Irvine.—p. 963.
Nonirritating Silver Arsenic Compound. H. O. Long.—p. 964.

Acute Rheumatism in Childhood.—No significant differences as to the size of tonsils or the frequency of sore throats were found by McSweeney to exist when a series of observations in rheumatic children were compared with a series of observations in a similar group of nonrheumatic children. Chorea, permanent heart disease, and other rheumatic manifestations were found to have developed in several cases after tonsillectomy had been performed. Some slight evidence was found in this inquiry in support of the theory of the infectivity of rheumatism. Overcrowding did not seem to predispose to the onset of rheumatism, but thirteen of the fourteen rheumatic children found living in overcrowded conditions showed evidence of cardiac involvement. The incidence of dampness in the houses of 201 rheumatic children was not significantly higher than in the houses of 108 nonrheumatic children. Ground floor dampness was found to exist more often in the houses of rheumatic children (which, as a rule, were older houses) than in those occupied by the controls, but this did not seem to produce a tendency toward any particular type of rheumatic onset. A general dampness of the house was more often associated with the onset of rheumatic pains than with other types of onset, but the differences were not significant. Dampness of houses, of whatever distribution, did not appear to predispose to the onset of chorea in preference to any other type of onset. Living in damp houses did not predispose especially to rheumatic fever or to cardiac involvement. No close relation was found to exist between proximity to water and the development of rheumatism.

Annales de Médecine, Paris

23: 301-412 (April) 1928

Rheumatic Myalgias. H. Verger and P. Delmas-Marsalet.—p. 301.
Treatment of Pernicious Anemia with Liver or Liver Extract. G. R. Minot, W. P. Murphy and E. J. Cohn.—p. 319.
*Composition of Blood in Obesity. M. P. Weil, C. O. Guillaumin and L. Abricosoff.—p. 328.
*Anaerobic Bacteremias Due to Bacillus Ramosus. L. Boez, A. Kehlstadt and J. Schreiber.—p. 340.
Iso-Electric Point of Blood. P. H. Rossier.—p. 348.
Pathologic Anatomy of Heart-Block. I. Mahaim.—p. 381.

Composition of Blood in Obesity.—Weil et al. analyzed specimens of blood from twenty-one obese persons and found that they contained more than the normal amounts of total protein, cholesterol, dextrose and uric acid.

Anaerobic Bacteremias Due to Bacillus Ramosus.—Boez et al. isolated *Bacillus ramosus* from the blood of seven patients affected with puerperal septicopyemia, benign puerperal infection, mastoiditis with thrombophlebitis of the sinuses caused by *Staphylococcus aureus,* tuberculous meningitis, pneumonia, hepatonephritis with subphrenic abscess, and old phlebitis with pulmonary infarct. The prognosis in bacteremia due to *B. ramosus* depends largely on the initial focus or its metastases. The morphologic and cultural characteristics of *B. ramosus* are given.

Bulletins et Mém. de la Soc. Méd. des Hôpitaux, Paris

52: 653-675 (May 3) 1928

Hereditary Transmission of Sarcoma. M. Pinard and Versini.—p. 653.
*Drainage of Pleural Cavity in Tuberculous Pleurisy. M. Renaud, Petit-Marie and Miget.—p. 657.
Liver Treatment of Pernicious Anemia. G. Hayem.—p. 667.

Drainage of Pleural Cavity in Tuberculous Pleurisy.—After pointing out the objectionable features of oleothorax, Renaud et al. report five cases of purulent tuberculous pleurisy treated by making a small intercostal incision in the posteroinferior part of the thorax and introducing a cannula for continuous drainage. In two of the cases, daily lavage with surgical solution of chlorinated soda was practiced. A marked improvement was noted in four of the cases.

Gynécologie et Obstétrique, Paris

17: 257-352 (April) 1928

*Value of Wassermann Reaction in Pregnancy. A. Laffont and A. Mêle.—p. 257.
*Wassermann Reaction in Blood from Umbilical Cord. P. Trillat and J. Rousset.—p. 264.
Comparative Serology of Blood from Umbilical Cord and of Retroplacental Blood. G. Chappaz.—p. 283.
*Treatment of Tuberculosis of Uterine Adnexa. T. Keller.—p. 286.
Bilateral Congenital Dislocation of Hip. P. Verning.—p. 292.
Perforation and Rupture of Pyosalpinx into Peritoneal Cavity. J. L. Lapeyre.—p. 304.
Triple Pregnancy Diagnosed Roentgenologically. H. Marcus.—p. 312.
Clinical Tests for Ovarian Function. S. Tzovaru.—p. 316.

Value of Wassermann Reaction in Pregnancy.—Laffont and Mêle, on the basis of 477 Wassermann tests performed with 335 specimens of blood from pregnant women and 142 from the umbilical cord of new-born infants, conclude that: (1) The Wassermann reaction is not so reliable in women who give a history of having given birth to dead or macerated fetuses (35 per cent instead of 56 per cent of positive reactions). This phenomenon is apparently associated with a state of syphilitic anergy. The Wassermann reaction is frequently positive in the blood from the umbilical cord of infants whose mothers give a negative reaction. (2) It is more frequently positive in the blood of the mother than in the blood of the umbilical cord, except in mothers who have given birth to several dead or macerated fetuses. (3) A certain number of spontaneous abortions are not due to syphilis. The refusal of some women to admit that the abortions which they have had were artificially induced is one cause of error in interpretation. (4) With the exception of these special cases, the Wassermann reaction is of as great value in pregnant as in nonpregnant women. With it one can disclose the presence of syphilis in about 10 per cent of apparently healthy women.

Wassermann Reaction in Blood from Umbilical Cord.—Trillat and Rousset examined specimens of umbilical cord blood from 935 new-born infants. They found that in the great majority of cases a healthy mother and a healthy newborn child gave negative reactions. Likewise, in all their cases in which positive reactions were obtained, they found manifestations of syphilis either in the mother or in the child. They conclude that a positive Wassermann reaction in the blood from the umbilical cord is a very important argument in favor of hereditary syphilis.

Treatment of Tuberculosis of Uterine Adnexa and of Peritoneum.—In one case of tuberculosis of the uterine adnexa with peritoneal involvement, laparotomy and repeated tappings had no effect on the condition but, in this and one other similar case, roentgen-ray treatment was followed by a complete disappearance of symptoms and by a striking improvement in the patients' condition. Keller recommends roentgen-ray treatment very highly in such cases. In cases in which the diagnosis is not made until after operation, postoperative irradiation aids in the recovery. In the case of chronic exudative peritonitis, especially when marked ascites is present, laparotomy seems indicated; for several years the author has been in the habit of introducing a solution of silver and methylene blue into the abdominal cavity and he suggests that the excellent results obtained by the subsequent roentgen irradiation of the abdomen with weak doses may be due to secondary irradiation from the metal.

Paris Médical

67: 421-436 (May 12) 1928

Serotherapy in Disseminated Sclerosis. Laignel-Lavastine and Koressios.—p. 421.
*Solution of Pituitary in Diabetes Insipidus. F. Rathery and J. Marie.—p. 423.
Treatment of Eczema in Babies. P. Lereboullet.—p. 433.

Therapeutic Value of Solution of Pituitary in Diabetes Insipidus.—Rathery and Marie found that in most cases of diabetes insipidus an extract from the posterior lobe of the hypophysis acts specifically. The other forms of treatment which, in a few cases, can modify the syndrome are not comparable either in rapidity or in intensity of action to solution of pituitary. In some cases of diabetes insipidus which react perfectly to solution of pituitary the same results can be obtained with lumbar puncture or with antisyphilitic treatment. This is doubtless the result of an action on the underlying condition causing the diabetes insipidus and in no way weakens the arguments in favor of the specificity of posterior lobe extract. In a few cases, 5 per cent at the maximum, posterior lobe extract has little or no action. On the other hand, other therapeutic measures may be successful. The pathogenesis of these cases is doubtless different from the pathogenesis of the common form of diabetes insipidus.

Presse Médicale, Paris

36: 577-592 (May 9) 1928

*Bone Changes in Interstitial Nephritis in Infants. E. Apert.—p. 577.
"Mycosis of the Spleen." Nanta, P. Émile-Weil and Pinoy.—p. 579.
Reply. M. Langeron.—p. 580.

Bone Changes in Interstitial Nephritis in Infants (Renal Nanism; Renal Pseudorickets).—From the study of a case of renal nanism in a child, aged 4, Apert concludes: (1) Atrophic interstitial nephritis occurring in infancy or in adolescence frequently causes marked alterations in the growth of the bones; growth is retarded or stopped, and epiphyseal deformity occurs, particularly at the lower end of the femur, resulting in a condition resembling subluxation and interfering with walking; in the less severe cases, one notes articular deviations, particularly genu valgum (renal pseudorickets). (2) The general condition of such patients is usually defective and is characterized by a marked retardation in bodily development and, when it occurs very early, in the development of the genitalia (renal nanism and infantilism). The subjects are thin and pale and have a dry, wrinkled skin. (3) Ordinarily, there is no albumin in the urine but the urine is pale, sometimes abundant, sometimes scanty; headache is frequently present. (4) A persistent urea content of 0.50 Gm. per thousand cubic centimeters of serum indicates renal insufficiency and confirms the relation between the kidneys and the bony deformities. (5) Such patients should not be operated on, because any form of general anesthesia may result in uremia followed by death.

V 91
1928

(6) At necropsy, small, red, contracted kidneys are found. (7) After growth is complete and ossification of the epiphyseal cartilages has taken place, such changes cannot occur.

36: 593-608 (May 12) 1928

Therapeutic Effects of Acetylcholine. M. Villaret and L. Justin-Besançon.—p. 593.
*Cardiac Insufficiency in Pulmonary Tuberculosis. R. Godel.—p. 596.

Cardiac Insufficiency and Congestive Forms of Pulmonary Tuberculosis.—Godel describes a syndrome of acute or subacute cardiac insufficiency which occurs frequently in all stages of tuberculosis. It manifests itself particularly by crises of paroxysmal decubitus or effort dyspnea, the intensity of which varies from slight respiratory embarrassment to suffocation. Along with this major symptom there may occur instability of arterial pressure with hypotension, oliguria, various cerebral disturbances which are found in the majority of cases of circulatory insufficiency and disappear with it, pulmonary edema, congestion and even apoplexy. Hypertrophy of the left ventricle occurs frequently in patients in whom the cardiac insufficiency is marked. The cardiac disturbances are independent of the extent of the pulmonary lesions. As an explanation of these symptoms, necropsy usually shows: (1) a constant, moderate hypertrophy of the left ventricle; (2) congestive, edematous, or apoplectiform lesions of the lung. Of all the complications occurring in pulmonary tuberculosis, cardiac dyspnea is the one most susceptible to therapy. Godel recommends ouabain and digitalin.

Sang, Paris

2: 209-320, 1928

Blood Sugar Determination. G. Fontès and L. Thivolle.—p. 209.
*Treatment of Pernicious Anemia. P. Émile-Weil et al.—p. 218.
Leeches in Surgical Phlebitis. J. Ducuing et al.—p. 240.
Influence of Temperature on Serum Content of Blood. Brocq-Rousseu and G. Roussel.—p. 253.

Treatment of Pernicious Anemia.—Émile-Weil et al. discuss the treatment of pernicious anemia by blood transfusions combined with injections of insulin (Walinski's method) and by the ingestion of liver. After comparing the two methods they conclude: (1) Pernicious anemia can be cured by Walinski's method, but in the majority of cases the results are less regular and less marked than those obtained by the ingestion of liver. (2) The results following the use of Whipple's method are so uniform and so striking that no other method can be compared with it. It not only cures the condition, but in small doses prevents its recurrence. (3) A few transfusions or insulin therapy, but no medicinal treatment, may be combined with the Whipple method to save time.

Schweizerische medizinische Wochenschrift, Basel

58: 425-448 (April 28) 1928. Partial Index

Therapeutic Experiences with Gluconic Acid Calcium. C. Schneiter.—p. 425.
*Influence of Atmospheric Electricity on Sensitive Human Organism. G. Schorer.—p. 431.
Technic of Intravenous Injection of Radium Emanation. C. Du Bois.—p. 432.

Influence of Atmospheric Electricity on Sensitive Human Organism.—In the course of three years 500 measurements of the capability of the air for conduction were made on a person who exhibited a high degree of sensitiveness to weather conditions. It was found that the subjective disturbances, which were accompanied by decrease in the blood pressure and in the alveolar carbon dioxide tension, appeared when there was a preponderance of negative over positive electrophors in the air. Positively charged air was felt as refreshing, negatively charged air as unpleasant and sultry.

Archivio di Antropologia Criminale, etc., Turin

48: 1-220 (Jan.-Feb.) 1928

*Resistance of Criminals to Traumas. C. Gasparini.—p. 1.
*Psychometric Value of Children's Games. U. Rondelli.—p. 18.
Antropologic Criteria in Medicolegal Decisions. M. Carrara.—p. 30.

Resistance of Criminals to Trauma from Accident or Operation.—Gasparini, after noting the remarkable resistance of criminals to traumas and hardships and studying their type of reactions, reached the conclusion that this peculiarity is "one of the degenerative stigmata" of delinquency.

Psychometric Value of Children's Games.—Rondelli has found that children's games reveal excellently the mental attitudes of the children engaged in them. The measurement of reaction time and the percentage of errors brings certain mental defects clearly to light.

Bollettino d. Soc. Ital. di Biologia Sper., Naples

2: 989-1061 (Dec.) 1927

Structure and Function of Renal Epithelium. R. Bertelli.—p. 989.
Thyroid Hormone (Thyroxin) in Experimental Hyperthyroidism: Behavior of Epinephrine and Other Hormones. E. Giacomini.—p. 995.
Detection and Amplification of Bio-Electric Currents by Means of Thermo-Ionic Valves. E. Benedetti.—p. 1001.
*Immunization Against Tuberculosis with Bacilli Deprived of Acid Resistance. D. Ottolenghi and C. Rossetti.—p. 1005.
*Experimental Malarial Infection of Anopheles. D. Ottolenghi and C. Rossetti.—p. 1007.
Fatigue in Baggage Carriers. M. L. Patrizi.—p. 1009.
*Sodium Sulphate in Treatment of Anthrax. G. Brotzu.—p. 1015.
Sexual Function and Epilepsy in Dog. G. Amantea.—p. 1016.
Presence of Phosphagen in Heart. G. Martino.—p. 1019.

Immunization Against Tuberculosis with Non-Acid-Fast Bacilli.—Ottolenghi and Rossetti found that, whereas the control rabbits died spontaneously from thirty to forty days from the time they were inoculated, with great loss of weight and with diffuse tuberculosis of the spleen, the liver and the lungs, the rabbits that had been repeatedly inoculated with non-acid-resisting bacilli (from human tuberculosis) appeared after from four to five months in the best of health and showed marked increase in weight. When killed after that time, most of them presented, however, tuberculous lesions—but discrete and circumscribed—in the lung, sometimes in only one part of the lung, and not always containing tubercle bacilli discoverable on microscopic examination.

Experimental Malarial Infection of Anopheles.—Ottolenghi and Rossetti, on the basis of experiments with two species of anopheles (*A. claviger* and *A. elutus*), reached these conclusions: (1) With proper precautions, it is easy to infect anopheles with malaria, to the extent of 30 to 50 per cent of the insects used for each experiment, by allowing them to feed repeatedly on persons affected with malignant tertian or other forms of malaria or by inoculating them with the blood of a malaria patient. (2) It is possible to preserve active the malarial virus (tertian) for at least four months, by keeping the infected anopheles at a low temperature (about 3 C.). (3) Anopheles (*A. maculipennis*) caught in stables, even in localities where malaria is not common, easily become infected and infective on sucking the blood of malaria patients. (4) *Anopheles elutus*, is capable of being infected and of transmitting malaria the same as *Anopheles maculipennis*. (5) A single sting of a mosquito infected experimentally with tertian or estivo-autumnal malaria is sufficient to transmit the disease, even though the mosquito has already stung other persons since its infection, and although its infection took place a considerable time previously.

Sodium Sulphate in Treatment of Anthrax.—Bacteriologic tests made by Brotzu demonstrated that sodium sulphate by itself and in the permitted concentrations does not kill the spores of anthrax within forty-eight hours, which may be regarded as the maximum limit of time to be allowed for such treatment. Later experiments, however, showed that the action of the sulphate may be enhanced by the addition of certain salts; particularly, potassium sulphate and potassium sulphocyanate, which, added in 2 per cent doses to the 1.5 per cent sulphate solutions, make it possible to kill the spores in the skin of guinea-pigs or rabbits that have died from anthrax, within thirty-six hours at a temperature of from 15 to 20 C. Further researches are in progress.

Clinica Chirurgica, Milan

31: 187-287 (March) 1928

*Glycuronuria and Operative Prognosis. G. Pozzi.—p. 187.
Foreign Body Tumor from Lipovaccine. P. Barco.—p. 222.

Glycuronuria and Operative Prognosis.—Pozzi concludes that studies on the quantitative elimination of glycuronic acid will not furnish a basis for the estimation of the functional capacity of the liver in general nor for its antitoxic capacity in particular. In grave cases of liver disease, glycuronic acid is

present in the urine in exceedingly variable quantities, depending less on the degree of the alteration in the liver than on the state of intoxication of the organism.

Pediatria, Naples

36: 395-450 (April 15) 1928

*Chronic Arthritis Deformans of Heredosyphilitic Origin. L. Ricciardi. —p. 395.
Gastric Juice of the New-Born After Suction of "Pacifier." A. Loffredo. —p. 405.

Two Cases of Chronic Arthritis Deformans of Heredosyphilitic Origin.—As evidence for the syphilitic nature of the arthritis deformans in two children, aged 9 and 11, respectively, Ricciardi gives: the nocturnal exacerbation of the pain, independent of movement; the strongly positive Wassermann reaction, and the total disappearance of the pain following syphilitic treatment. The swelling of the joints affected still persists, but is much less. The limitation of movement has been, to a great extent, relieved, and the general condition is much improved. Ricciardi is convinced that chronic arthritis deformans in children is often due to congenital syphilis. An early diagnosis must be made in order to apply syphilitic treatment in time to prevent deformation of the joints.

Policlinico, Rome

35: 165-228 (April 1) 1928. Medical Section

Influence of Central Nervous System on Electrolytic Equilibrium of Blood. L. Condorelli.—p. 165.
*Hypersensitiveness to Epinephrine in Exophthalmic Goiter. D. Maselli. —p. 191.
Diastase Index of Blood and Urine in Patients with Liver Disease. R. Lovaglio.—p. 221.

Hypersensitiveness to Epinephrine in Exophthalmic Goiter.—Following the subcutaneous injection of epinephrine in patients with exophthalmic goiter and hyperthyroidism, Maselli observed a succession of phenomena similar to those reported by Goetsch. In two cases of typical exophthalmic goiter he obtained, after the injection of 0.75 mg. of epinephrine chloride, curves identical with those described by Goetsch.

Riforma Medica, Naples

44: 309-337 (March 19) 1928

Tuberculosis in Children, from Social Point of View. C. Cattaneo.—p. 309.
*Hypertensive and Cardio-Excitatory Action of Atropine-Epinephrine Mixture. M. Ronzini.—p. 312.
Peculiar Skin Reaction in Leper Treated with Roentgen Rays. M. Camplani.—p. 314.

Hypertensive and Cardio-Excitatory Action of the Atropine-Epinephrine Mixture.—Ronzini concludes from his experiments on dogs that the positive sympathicotropic (inotropic and chronotropic) effects of the atropine-epinephrine mixture are frankly evident, and not accompanied by vagal reactions of any kind, and that consequently the mixture can be used to advantage in the clinic, as it will give better and more certain results than can be secured with epinephrine alone, in all conditions in which, owing to a syndrome of vagal hypertonia (lowered blood pressure, collapse, bradycardia, uncontrollable vomiting, certain types of bronchial asthma, seasickness, and the like) a prompt and effective antivagal, hypertensive and cardio-excitatory remedy is required.

Anales de la Facultad de Medicina, Montevideo

12: 681-851 (Nov.-Dec.) 1927

*Generalized Peritonitis Without Apparent Perforation of Gallbladder in Course of a Gallstone Colic. H. Garcia Lagos.—p. 681.
*Traumatic Rupture of Tail of Pancreas: Fat Necrosis. C. Nario.—p. 693.
Hydatid Peritonitis Simulating Tuberculous Infection. J. C. del Campo. —p. 702.
*Spontaneous Rupture of Hydatid Cyst of Liver into Peritoneal Cavity. A. Agustoni and J. Soto Blanco.—p. 720.
*Hemoptysis Due to Hydatid Disease of Lung. M. A. Jaureguy.—p. 730.
Convalescent Serum in Treatment of Infectious Diseases of Infancy. J. J. Leúnda.—p. 747.
Multiple Inflammatory Foci with Gonorrhea. S. Buquet and J. M. Jaureguy.—p. 755.

Generalized Peritonitis After Attacks of Gallstone Colic.—In two cases reported by García Lagos, generalized peritonitis appeared during a gallstone colic, and in both cases operation disclosed an enormously distended gallbladder full of stones. Good results were obtained with drainage of the gallbladder and the peritoneal cavity.

Traumatic Rupture of the Tail of the Pancreas.—A man, aged 21, sustained a severe blow on the abdomen in an automobile accident. Clinically, it was apparently a case of rupture of the spleen or tear of the greater omentum. Operation showed that the tail of the pancreas had been ruptured.

Spontaneous Rupture of Hepatic Cyst into the Peritoneal Cavity.—A patient, aged 36, suffered from indigestion and pain in the right upper quadrant, which radiated to the right shoulder and later extended over the entire abdomen. On admission, soon afterward, ascites was marked; the superficial veins were prominent. There was some icterus. Palpation of the liver and spleen gave negative results. Paracentesis yielded a discolored fluid containing bile, fibrin and many erythrocytes and leukocytes. Laparotomy was done and a large quantity of gelatinous fluid was evacuated. A diagnosis was not made. The patient became progressively worse and death occurred about three weeks after the operation. The necropsy disclosed a ruptured hepatic cyst, probably a hydatid cyst.

Hemoptysis Due to Hydatid Disease.—Of ninety cases of hydatid cyst, thirty-eight, or 45 per cent, were of the lung, and all of them were accompanied by hemoptysis. In 57.5 per cent of the cases the hemoptysis recurred. In two cases the hydatid cyst was in the liver.

Anales del Hosp. de la Sta. Cruz y S. Pablo, Barcelona

2: 1-98 (Jan. 15) 1928

Experimental Study of Degeneration and Regeneration of Peripheral Nerves. L. Barraquer Roviralta.—p. 7.
*Physical Therapy of Vesical Tumors. V. Compañ.—p. 15.
Partial Heart Block Caused by Digitalis: Therapeutic Value of Squills. F. de A. Estapé.—p. 20.
Frequency of Dermomycoses in Cataluna. S. Noguer-Moré.—p. 23.

Physical Therapy of Tumors of the Bladder.—In the Santa Cruz Hospital, radium needles are used when indicated. The author has obtained his best results in the treatment of epitheliomas. Before instituting any treatment, a histologic report should be obtained.

Archivos Chilenos de Pediatría, Santiago

4: 703-752 (Nov.-Dec.) 1927

*Primary Conjunctival Tuberculosis in a Six Months Old Child. A. Scroggie V.—p. 705.
Exfoliative Dermatitis of the New-Born. J. Symon O.—p. 714.
Acid-Base Balance in Exudative and Neuropathic Diatheses: Hemoglobin and Acid Therapy. A. Wiederhold.—p. 717.

Primary Tuberculous Conjunctivitis.—A child, aged 6 months, showed loss of weight, malnutrition, marked dehydration, complete loss of subcutaneous fat and slight hypertonicity. It was a case of primary tuberculous infection of the conjunctiva, acquired from a tuberculous woman who had taken care of the baby temporarily. In the preallergic stage there was only a rise in temperature, accompanied with a low degree catarrhal inflammation of the upper air passages. Besides the primary lesion, with its regional gland enlargement, the only signs of tuberculous infection were an early exanthem and tuberculids.

Medicina Ibera, Madrid

1: 313-340 (March 24) 1928

Volkmann's Ischemic Contracture. L. Olivares.—p. 313.
*Specific Treatment of Amebic Dysentery. E. Escomel.—p. 319.

Specific Treatment of Amebic Dysentery.—Escomel gives an intravenous or intramuscular injection of 0.4 cc. of emetine, every day, the first three days, and every two hours 4 Gm. of bismuth subnitrate or carbonate, 15 Gm. of precipitated chalk, 0.60 Gm. of Dover's powder and 2 Gm. of exsiccated tannin albuminate. The author also prescribes a tepid enema of 1:1,000 silver solution, and a second enema of four tablespoonfuls of boiled water, the beaten yolk of one egg, with 25 drops of oil of turpentine and 10 drops of laudanum. The silver solution consists of 1 Gm. of colloidal silver per liter of water. For drinking purposes, the patients should use a decoction of rice with quince, linseed, gum and toast. The patient should have complete physical and mental rest. Hot

packs should be applied to the abdomen every two or three hours. On the fourth day enemas are given only in the evening, and the quantity of the solution is gradually decreased until on the ninth day only one tablespoonful is given. From the fourth day the diet is more varied. Amebic dysentery usually clears up with this treatment in four days. The feces should be examined often during treatment.

Revista de Medicina y Cirugía, Caracas

9: 253-274 (Feb. 29) 1928

Conjunctivitis. J. M. Espino.—p. 253.
*Use of Chaulmoogra Oil in Treatment of Trachoma. J. Rhode.—p. 263.
*Splenectomy for Splenomegaly of Probable Mycotic Origin. L. Rivero and F. Díaz.—p. 265.

Use of Chaulmoogra Oil in Treatment of Trachoma.—Rhode applies the oil to the diseased surfaces by means of cotton pledgets, making light but firm pressure, with some friction. Treatments are given twice a week. As a rule, local anesthesia is not necessary. He claims to have effected cures in cases in which all other treatments had failed.

Splenectomy for Splenomegaly of Probable Mycotic Origin.—Rivero and Díaz report the fourth splenectomy done in Venezuela for splenomegaly. Although all cultures for parasites were negative, the clinical course before and after operation was one which would point strongly to its being of mycotic origin. Transfusion was not done in this case. Before operation the patient's blood hemolized strongly the blood of five prospective donors.

Semana Médica, Buenos Aires

35: 1001-1060 (April 26) 1928

*Treatment of Tuberculous Asthma. J. J. Viton and J. A. Cruciani.—p. 1001.
Periviscerítis. A. V. Di Ciò.—p. 1006.
Dacryocystorhinostomy—Radical Cure for Lacrimation? A. J. Manes.—p. 1020.
Serum Therapy of Gonorrheal Orchitis and Epididymitis. J. R. Loureiro.—p. 1027.
*Blood in Leprosy. L. de Marval.—p. 1034.
Treatment of Pleural Effusions in Tuberculous Adults. E. M. Fernández Rey.—p. 1045.
Roentgenotherapy of Tinea: Three Hundred Cases. J. H. Silva.—p. 1047.

Treatment of Tuberculous Asthma. — Viton and Cruciani regard the use of tuberculin as being of most importance in the treatment of tuberculous asthma. It should be used according to the method of Viton in very small doses. They report eight cases in which complete relief from the asthma was obtained and the patients' condition in general greatly improved.

Blood in Leprosy.—De Marval examined the blood of 100 lepers of all types. Twenty had a leukocytosis exceeding 10,000; eight had less than 5,000 leukocytes; in seventy-two cases the numbers ranged between 5,000 and 10,000. The average count for all types of leprosy was 8,100; in the tubercular variety it was 9,200; 7,000 in the nervous type; 8,000 in the maculo-anesthetic type, and 8,000 in the mixed type. However, in all cases with leukocytosis an infection also was present. The author concludes that pure leprosy is not accompanied by leukocytosis. There was little change from the normal in the erythrocyte count. The average eosinophil count for the 100 cases was 4.48 per cent. Eosinophilia is characteristic of leprosy. The highest percentage in the tubercular form was 11.8 per cent; in the nervous form, 19 per cent; in the mixed form, 20.5 per cent and in the maculo-anesthetic form, 9.5 per cent. The average was highest in the nervous form, 6.5 per cent, lowest in the maculo-anesthetic form, 3.42 per cent. Among more than 30,000 leukocytes counted, only three myelocytes were seen. The average for the neutrophils was 62.89 per cent; for the lymphocytes, 23.74 per cent. The monocytes were always increased in number, the average being 8.2 per cent. This is taken as an indication of unusual activity in the reticulo-endothelial system and was most marked in the maculo-anesthetic form, 9.2 per cent. No characteristic observations were made of the platelets or of the staining reactions of the leukocytes. On the whole, the blood picture in leprosy is a highly inconstant one and is not of diagnostic value in any case.

Sciencia Médica, Rio de Janeiro

6: 51-101 (Feb.) 1928. Partial Index

Unusual Malignant Tumor of Kidney. A. Fialho.—p. 54.
*Leptospira Icterohaemorrhagiae in Rats. E. de Araujo.—p. 64.

Leptospira Icterohaemorrhagiae in Rats.—Araujo found *Leptospira icterohaemorrhagiae* in rats of Bahia. Several cases of infection of human beings were also noted. It seems that the rat is essential to revive the virulence of *Leptospira*, after a prolonged stay in natural media.

Archiv für Hygiene, Munich

99: 165-226, 1928

Fragility of Erythrocytes in Sheep; Lead Poisoning. H. Rupp.—p. 165.
*Production of Erythrocytes Presenting Basophil Granulation by Means of Moist Heat. H. Lehmann.—p. 181.
Researches on Yeast Increase. T. Kigasawa.—p. 196.
Power of Paratyphoid Bacilli to Form Toxin and Its Relation to Pathogenicity. M. Ries.—p. 209.

Production of Erythrocytes Presenting Basophil Granulation by Means of Moist Heat.—Experimenting on guinea-pigs, Lehmann was able to produce erythrocytes with basophil granulation by exposure to moist heat. He sees here a possible source of error in the early diagnosis of industrial lead poisoning. He describes a photographic method for computing the number of erythrocytes, which he holds to be more accurate than previous methods.

Beiträge zur klinischen Chirurgie, Berlin

143: 1-188, 1928

*Structure of Gallstones on Basis of their Examination by Roentgen Ray. K. H. Bauer and H. Habs.—p. 1.
Fractures of Tibia, Fibula and Malleoli. A. Pörsch.—p. 29.
*Nerve-Sectioning Abdominal Incisions. A. Nussbaum.—p. 50.
*Cholecystography with Oral Administration of Contrast Medium. P. Seulberger and E. R. Heydemann.—p. 61.
Treatment of Fistulas of Pancreas. O. Hahn.—p. 73.
So-Called Malacia of Carpal Semilunar Bone and Its Relation to Other Localized Diseases of Bones. W. Jaroschy.—p. 75.
*Section of Rami Communicantes in Spastic Paralyses. W. Lehmann.—p. 118.
Osteitis Fibrosa of Os Naviculare. E. Cordes.—p. 127.
*Endocrine Basis of Diseases of Joints. W. Müller.—p. 137.
Symmetrical Osteochondritis Dissecans of Condyles of Femur. H. Niessen.—p. 159.
"Postoperative Roentgenotherapy of Breast Cancer." O. Jüngling.—p. 171. Reply. K. Luhmann.—p. 174.

Composition of Gallstones.—Bauer and Habs examined with the roentgen ray 313 gallbladders containing one or more stones and in only five cases were they unable to classify the stone as to its composition. One was a pure cholesterol stone with bipolar cholesterol pigment deposits. The remaining four stones could not be classified, even on microscopic examination.

Nerve-Sectioning Abdominal Incisions. — Nussbaum shows by means of operations on animals that lengthwise laparotomy incisions made through the abdominal muscles—although they sever nerves—do not predispose to the formation of hernias. The divided nerves regenerate as far as the rectus sheath; never beyond that point. Herniation does not occur even when these muscles degenerate medially to the nerve section. The portion of rectus muscle remaining without a nerve supply is converted into connective tissue.

Cholecystography with Oral Administration of Contrast Medium.—Seulberger and Heydemann record 10 per cent of failures to diagnose biliary tract diseases, using the oral administration of the contrast medium—and these failures are ascribed to errors in technic. They prefer the iodine salt.

Section of Rami Communicantes in Spastic Paralyses.—Lehmann disapproves of performing Royle's operation under any circumstances, because better results can be obtained from nerve, muscle and tendon operations. In one case of parkinsonism, Foerster's operation was done but was a complete failure.

Endocrine Basis of Diseases of Joints.—Müller asserts that endocrine disturbances are an important etiologic factor of joint diseases, in that they create a predisposition to disease. He emphasizes the fact, however, that such diseases may result without endocrine basis—for example, osteochondritis deformans coxae juvenilis. There is a definite relationship between the endocrine system and joints, especially in the earlier years of life.

Postoperative Roentgenotherapy of Breast Cancer.—Jüngling fails to see any advantage accruing from the postoperative irradiation of breast cancer. Equally good results have been obtained from surgery alone. It is evident, however, that small doses frequently repeated give better results than a single large dose.

Klinische Wochenschrift, Berlin

7: 625-672 (April 1) 1928. Partial Index

Protective Inoculation Against Diphtheria. M. von Pfaundler and P. Zoelch.—p. 625. Cen.
Insulin and Glycemia. S. Dietrich and O. Loewi.—p. 629.
Quantitative Estimation of Postrotatory Nystagmus. M. H. Fischer.—p. 634.
*Amino-Acids in Blood in Tuberculosis. L. Hantschmann and M. Steube.—p. 637.
Paraspecific Serum Therapy in Acute Infectious Disease. H. Taterka.—p. 638.
*Plasmochin in Treatment of Malaria in Children. F. Schiassi and G. Merighi.—p. 640.
Meinicke's Flocculation Reaction in Cerebrospinal Fluid. Untersteiner and K. Scharfetter.—p. 641.
*Nature of Hypertension in the Menopause. E. Baráth.—p. 643.
*Treatment of Painful Flatfoot. H. Schwan.—p. 644.
Surgical Treatment of Diabetes. R. Priesel and R. Wagner.—p. 644.
Reply. G. Mansfeld.—p. 645.
Gas Therapy of Malignant Growths and Cachectic States. W. Caspari.—p. 645.
Reply. Fischer-Wasels.—p. 646.

Amino-Acids in the Blood in Tuberculosis.—The amino-nitrogen content of the blood was determined in 200 patients in various stages of pulmonary tuberculosis. The amount varied from 3.89 mg. to 10.00 mg. per hundred cubic centimeters of blood. Among the cases with increased content, fresh processes and exacerbations were frequent; among those with decreased values, cachexia and uninfluenceable emaciation.

Plasmochin in Treatment of Malaria in Children.—For treating children, plasmochin has the advantages of being tasteless and soluble in milk or water. For children under 6 months, Schiassi and Merighi recommend 0.05 Gm. twice a day; thereafter the dose is 0.1 Gm., given twice a day up to the age of 2 years, three times a day from 2 to 6 years, four times a day from 6 to 12 years. During the first two or three days one extra dose may be given each day. Cyanosis, which usually appears without general or local symptoms, is a warning to decrease the amount.

Nature of Hypertension in the Menopause.—Baráth's researches bring out the fact that, in the majority of cases, high blood pressure in women in the menopause is of spastic nature.

Treatment of Painful Flatfoot.—Schwan blocks the peroneal nerve at the head of the fibula by pressure and is thus able to carry out supination without pain.

Medizinische Klinik, Berlin

24: 479-518 (March 30) 1928. Partial Index

Indications for Intervention During Labor. G. Winter.—p. 479.
*Pneumothorax in Tuberculosis Complicating Diabetes. H. Dorendorf.—p. 485.
*Therapeutic Experiences with Hyperthermia Produced by Physical Means. F. Walinski.—p. 488.
Chickenpox. A. Kletetschka and F. Lucksch.—p. 492.
Appendicitis and Measles. H. L. Popper.—p. 493.
Psychology of Stammering. F. Gumpertz.—p. 494.
Bier's Cauterization Therapy. A. Schüle.—p. 496.
Immunization Against Typhoid. W. Spät.—p. 496.

Pneumothorax in Tuberculosis Complicating Diabetes.—Dorendorf treated three cases of pulmonary tuberculosis associated with diabetes by artificial pneumothorax. The treatment acted favorably on the metabolic disturbance in all.

Therapeutic Experiences with Hyperthermia Produced by Physical Means.—Walinski combined intravenous injections of sodium chloride (10 cc. of a 20 per cent solution) with hot baths and hot packs to produce hyperthermia. The sodium chloride prevented loss of heat by perspiration. By this method the body temperature was maintained above 37.5 C. for nine hours and forty minutes, above 40 C. for four hours and forty-six minutes and above 41 C. for twenty-two minutes. He used this method, applied every second day, in fourteen cases—two of general paralysis, two of syphilis of the brain, four of tabes, three of multiple sclerosis, two of arthritis deformans and one of fibrous ankylosis. Considerable improvement was obtained in the patients with paralysis, in those with brain syphilis, in three with tabes, and in the patient with ankylosis. There was slight improvement in the other patients except in one with arthritis deformans, who remained unchanged.

Münchener medizinische Wochenschrift, Munich

75: 721-760 (April 27) 1928. Partial Index

Administration of Vitamin D to New-Born Infants. E. Vogt.—p. 721.
Action of Cologne on Human Skin. E. Zurhelle.—p. 723.
Filth Bacteria and Pigment-Forming Bacteria in Milk. R. Müller.—p. 726.
Cell and Albumin Content of Normal Cerebrospinal Fluid. A. W. Neel.—p. 728.
*Simple Ambulant Treatment of Congestive Dermatitis of the Leg. F. Wirz.—p. 730.
Morphinism and the Law. E. Schultze.—p. 731. C'td.
Case of Muscle Atrophy with Extrapyramidal Motor Disturbance. H. Baumm.—p. 734.
*Case of Perforation of Uterus. R. Mandelbaum.—p. 736.
Erythromelalgia After Attempt at Suicide with Ergotamine Tartrate. L. Nielsen.—p. 736.

Simple Ambulant Treatment of Congestive Dermatitis of the Leg.—Wirz paints the oosing lesions with a 2 per cent silver nitrate solution and, after this has dried, paints the entire affected skin area and the adjoining skin with a preparation containing ichthyol 10 Gm.., zinc oxid and Venetion talc each 25 Gm., glycerin 5 Gm., alcohol and distilled water each 100 Gm. The painting is repeated several times. After it has dried, an elastic bandage is applied to the leg. This treatment is repeated night and morning; the elastic bandage being worn during the day only. Healing is obtained in from fourteen days to fourteen weeks, according to the severity of the case. All varieties of congestive dermatitis have been thus treated with success.

Case of Perforation of Uterus.—In dilating the cervix preliminary to an interruption of pregnancy in the third month, the uterus was perforated below the internal os. More than twelve hours after the accident, the woman was brought to Mandelbaum for operation. In the abdominal cavity he found a few blood clots, but no free blood. Supravaginal amputation was performed. The perforation opening was found to be completely plugged with a blood clot. Recovery was smooth.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

60: 285-562 (April 25) 1928

Insulin-Like Action of Bean-Pod Extracts. E. Kaufmann.—p. 285.
Physicochemical Behavior of Protein Groups, Purified by Electrodialysis and Dissolved in the Form of Sodium Salt, of Pathologic Human Blood and Exudates. K. Hartl and W. Starlinger.—pp. 289 and 315.
Change in Potassium-Calcium Proportion of Lymph in Experimental Sepsis. W. F. Petersen, G. Milles and E. F. Müller.—p. 336.
*Cerebrospinal Fluid Antibodies and Wassermann Reaction. L. Neufeld and D. Szyle.—p. 355.
Treatment of Cardiac Diseases with Adonis Vernalis. H. Löhr.—p. 368.
*New Disease of White Mice Following Splenectomy. E. Lauda and E. Haam.—p. 385.
Origin and Nature of Lipoid Antibodies. F. Klopstock.—p. 394.
Skin Tests with Typhoid Bacilli, Lipoid and an Apathogenic Air Bacterium in Typhoid Patients. A. Haim and L. Gmelin.—p. 403.
Extraction and Properties of Secretin. L. Takács.—p. 424.
Vital Staining with Acid Dyes and Anodally Wandering Substances. G. Wallbach.—p. 430.
Pathology of Reticulo-Endothelium Apparatus. L. I. Wilensky.—p. 473.
Changes in Electrocardiogram During Physical Work. N. Messerle.—p. 490.
Epinephrine Reaction. F. Kisch.—p. 502.
Micromethod of Determination of Serum Proteins. E. Fried.—p. 515.
Results of Orthodiagraphic Heart Examinations of Soldiers Marching with Packs. K. Eimer.—p. 521.
Participation of Intestine in Elimination of Hydrogen Ions. J. Katzenstein.—p. 532.
Nature of Clonus in Experimental Spasm, Study with Aid of Action Current. C. G. Sundberg, W. Trendelenburg and O. Voss.—p. 549.
Determination of Blood Bilirubin. L. Jendrassik and A. Czike.—p. 554.

Cerebrospinal Fluid, Antibodies and Wassermann Reaction.—Neufeld and Szyle maintain that the Wassermann reaction cannot be an antigen-antibody reaction, since their researches show that the cerebrospinal fluid is not able to form antibodies locally.

New Disease of White Mice Following Splenectomy.—The disease described by Lauda and Haam ran in four stages: (1) Motor restlessness, rough coat; (2) circus movements; (3) epileptiform attacks, spastic paralysis of hind legs; (4) inanition, dyspnea, death. The disease is probably caused by an endogenous mouse virus, activated by splenectomy.

V 91
1928

Zeitschrift für klinische Medizin, Berlin

107: 467-665 (April 3) 1928

Carbohydrate Metabolism in Hepatic Diseases. A. Oppenheimer.—p. 467.
Insulin Hypoglycemia in Man. O. Klein and M. Kment.—p. 476.
Laurence-Biedl's Disease. H. Bernhardt.—p. 488.
Prodromal Latent Period in Atypical Case of Acute Myelosis. A. E. Lewin.—p. 498.
*Influence of Mud Baths on Blood Pressure. E. M. Brussilowski and B. G. Rubinstein.—p. 507.
Influence of Silicic Acid Treatment on Cells of Sputum. M. Baumwell. —p. 514.
*Influence of Training as Oarsmen on Blood Picture. R. Ackermann and F. Lebrecht.—p. 519.
Cardiovascular System in Fatigue. L. P. Pressmann.—p. 533.
Changes in Excitability of Muscles and Nerves in Postencephalitic Parkinsonism. G. Marinesco, O. Sager and A. Kreindler.—p. 544.
Chloroprival Tetany in Diseases of Stomach. H. Steinitz.—p. 560.
*Increase in Diuresis from Morphine, etc., in Circulatory Diseases. R. Hopmann.—p. 582.

Influence of Mud Baths on Blood Pressure.—The first phase in the treatment of arthritic patients with mud baths was marked by a shifting to the left of the entire leukocyte formula, which speaks for rejuvenation of the blood. The second phase was characterized by excitation of the lymphoid organs and reticulo-endothelial system.

Influence of Training as Oarsmen on Blood Picture.—The subjects studied by Ackermann and Lebrecht are divided into two groups: A. Men who had previously been in training for rowing. B. Men whose present period of training was the first. In group A, the number of erythrocyte counts over 5 million were decreased after training. The counts above 6 million and below 4 million (18 and 11 per cent, respectively, before training) were wiped out. In group B, there were, before training, no counts above 6 million or below 4 million. The percentages of decrease and those of increase (42 and 58, respectively) were approximately the same as in group A. The hemoglobin increased in 82 per cent and decreased in 18 per cent of men in group A. In group B, it increased in 12 and decreased in 78 per cent. The changes in the hemoglobin and in the erythrocyte values did not always run parallel. Leukocyte counts above 8,000 before training were more frequent in group A than in group B, values below 6,000 were more frequent in group B. Both groups showed a decrease of total erythrocytes in the majority of cases. The number of subnormal neutrophil values was increased after training. In group A high lymphocyte values were present in the majority before training, in a minority after training. In group B the situation as regards the lymphocytes was exactly the opposite. The large monocytes were fewer than normal both before and after training in the majority of cases. The changes in the eosinophil and basophil cell counts were inconsiderable.

Increase in Diuresis from Morphine, etc., in Circulatory Diseases.—In about one third of seventy cases of diseases of the circulatory apparatus, a sudden increase in diuresis was observed in sleep induced by morphine or chloral hydrate. It was dependent on a certain degree of digitalization. The effect was not obtainable in cases of renal diseases or cirrhotic ascites. Hopmann suggests a central (cortical) action in the inhibition and liberation of diuresis. Barbital and phenobarbital, which act chiefly on the thalamus, did not increase diuresis.

Zentralblatt für Chirurgie, Leipzig

55: 1089-1152 (May 5) 1928

Clinical Value of Clemens' Blood Agglutination Test. K. Flick and E. Traum.—p. 1091.
*Blood Sugar in Surgeons. H. Kinzel.—p. 1092.
Spastic Ileus in Pulmonary Embolism. K. Henle.—p. 1094.
*Possibility of Certain Blood Changes in Bone Fractures. G. L. Frenckell and R. L. Gawrilow.—p. 1097.
*Rectal Ether-Oil Drop Anesthesia. H. Matti.—p. 1100.
Rupture of Small Intestine in Absence of External Trauma. E. Siegmund.—p. 1105.
Control of Bleeding from the Skin in Trephining. F. Kuhn.—p. 1107.

Blood Sugar in Surgeons.—Blood sugar determinations made on surgeons four to five hours after operating showed a lowering of from 0.03 to 0.05. No such lowering was noted on nonoperating days. Kinzel concludes that the process of performing a surgical operation calls for a great expenditure of energy, but that such lowering of the blood sugar level in persons with normal metabolism is without consequence.

Possibility of Certain Blood Changes in Bone Fractures.—Frenckell and Gawrilow report the case of a man in whom, four days after fracture of the clavicle, there developed a purpuric eruption on the lower extremities. It extended over the entire body, with several fresh crops appearing in the next three weeks. Careful, repeated blood examinations established as the sole observation a lowering of the osmotic resistance of the erythrocytes to such an extent as to approach that of hemolytic jaundice. The van den Bergh test gave 0.004 mg. of bilirubin per cubic centimeter of serum. The authors believe that this unusual complication was caused by the introduction into the circulation of bone marrow at the time of fracture.

Rectal Ether-Oil Drop Anesthesia.—Matti favors the use of oil-ether rectal anesthesia, using the drop method of administration which permits of controlling the dosage more accurately than with the single massive dose of an oil-ether enema. The average amount required was 4.6 cc. of ether per kilogram of body weight. The method is advantageous in operations on harelip and cleft palate, and in other operations for which inhalation anesthesia is not suited.

Zentralblatt für Gynäkologie, Leipzig

52: 1049-1112 (April 28) 1928

Culture of Bacteria in Diagnosis of Latent Gonorrhea in Women. P. E. Heine.—p. 1050.
Induction of Labor with Solution of Pituitary. K. Hatzky.—p. 1056.
Backache and Head's Zones of Hyperalgesia. R. Klotz.—p. 1065.
Determination of Sex. K. Hellmuth and W. Schmitt.—p. 1067.
*Intra-Uterine Pregnancy After Operations for Tubal Pregnancy on Both Sides. G. Burckhard.—p. 1070.
Spontaneous Opening of an Occluded Tube. C. Rosenberger.—p. 1070.
Histologic Changes in Parametrium During Pregnancy. T. Rossinski. —p. 1072.
Torsion of Cervix. H. Jentter.—p. 1074.
Delivery of a Dicephalous, Tribrachious Monster. F. Krauss.—p. 1075.

Intra-Uterine Pregnancy After Operations for Tubal Pregnancy on Both Sides.—Burckhard operated for ruptured tubal pregnancy on the left side and exactly two years later for the same condition on the right side. A little more than two years after the second operation, the patient passed through a normal pregnancy and was delivered of a normal child at term.

Zentralblatt für innere Medizin, Leipzig

49: 345-392 (April 21) 1928

*Diagnosis and Prognosis of Various Processes in Pulmonary Tuberculosis. W. Neumann.—p. 346.
New Theories on Tuberculin and Origin of Pulmonary Tuberculosis. W. Olshausen.—p. 366.
Practical Methods of Raising Vitamin Potency of Foodstuffs. G. Zehden. —p. 373.

Diagnosis and Prognosis of Various Processes in Pulmonary Tuberculosis.—Two processes entirely due to exogenous reinfection are stationary cavernous tuberculosis, a benign process, in which tuberculin treatment often leads to final consolidation, and fibrocaseous phthisis, which may be recognized by the localization of the caverns, the oldest of which is in the apex of an upper lobe, the next oldest in the apex in the corresponding lower lobe. Auscultation will reveal a difference in breath sounds answering to the difference in the age of the caverns. Pleurite à répétition is a third process due to exogenous reinfection. In the fever-free intervals the appearance and subjective condition are good. Artificial pneumothorax must be instituted promptly, before caverns or infiltrates on the opposite side make it impossible. It is the only successful method in these peculiar cases. Patients in whom infraclavicular auscultation phenomena are the most pronounced are in an entirely different class, and are not always helped by collapse therapy; the disease may spread by the lymph or blood route. In diffuse fibrous or ulcerofibrous tuberculosis, caverns may make almost no signs or be entirely latent, and the same is true of infiltrates. Dense fibrous tuberculosis is characterized by symmetrical bilaterality of the changes; diffuse fibrous tuberculosis by emphysema. Under favorable conditions, the prognosis of both these fibrous processes is good. Tuberculous indurations of the pleura may exist with mobility of the diaphragm and a free phrenicocostal sinus, as shown in roentgenograms. Piery's pleurite à répétition is the result of repeated reinfection insufficient to call forth fibrocaseous phthisis. It is found in persons

living in a tuberculous milieu, particularly in persons with disturbances of the vegetative nervous system. The prognosis is favorable. A further variety of pleurite à répétition results from a single dissemination of bacilli of low virulence. Symptoms may be confined to the eye or may also appear in the joints. Similar changes in the lungs and in the eye membranes, but accompanied by a hard spleen and rigid vessels, are found in a third, virulent, form of pleurite à répétition. Tuberculous processes in which the bacilli reach the pulmonary parenchyma by the hematogenous route are more numerous, but may pass unrecognized, being overshadowed by lesions in other organs. The bacillemia fever often causes very slight subjective symptoms. At times, however, the fever that marks the first outbreak of bacilli into the blood resembles typhoid.

Physiotherapia, Moscow

2: 1-101 (Jan.-Feb.) 1927. Partial Index

*Sun Baths. A. H. Boiko.—p. 43.

Sun Baths.—Boiko has designed a thermo-electric actiometer for registering the intensity of the sun's rays. The absorption of heat in the course of a sun bath can cause considerable disturbance if sufficient cooling is not provided. Sun baths are not well tolerated on still, windless days.

2: 1-152 (March-June) 1927. Partial Index

*Treatment of Bronchial Asthma with Ultraviolet Rays. U. E. Kasakevich.—p. 31.
*Roentgen-Ray Treatment of Pituitary Tumors. B. I. Sharapov and V. I. Jutchenko.—p. 80.

Treatment of Bronchial Asthma with Ultraviolet Rays.—In many cases of asthma, examination of the vagotonic and sympathicotonic reactions reveals an increased irritability of the vegetative nervous system. In such cases, ultraviolet irradiation diminishes the irritability. The peripheral irritation is lowered and the asthmatic attacks disappear.

Roentgen-Ray Treatment of Pituitary Tumors.—Sharapov and Jutchenko report the results obtained with roentgen-ray treatment in forty-nine cases of tumors of the pars anterior of the hypophysis, characterized by more or less prominent symptoms of acromegaly. The first beneficial effect noted is the disappearance or diminution of symptoms due to pressure on the chiasma, enlargement of the field of vision and improvement of vision. Symptoms of increased brain pressure, headaches and vomiting, are improved or disappear. At a later date, there is a return of the sexual function, manifested in women by the return of menstruation, in men by the return of potency. Coincident with this is a loss in weight. The enlarged extremities do not return to a normal state, but a relative diminution in size was observed in some of the cases. Apparently adenomas only are destroyed by the rays. Teratomas, cysts and gummas do not yield to the treatment. In the beginning there may be an exacerbation of symptoms, which, however, should not deter one from continuing the irradiations.

Meditsinskoe Obosrenie, Astrakhan

7: 3-90 (Jan.-Feb.) 1927. Partial Index

*Influence of Depancreatization on Blood Catalase. B. A. Grzimanovski.—p. 25.

Influence of Depancreatization on Blood Catalase.—After the removal of the pancreas in dogs Grzimanovski found a diminution of blood catalase, which progressed until the death of the animal. The disturbance of carbohydrate metabolism in these animals apparently depends on diminution of catalase activity and on dehydration by the intermediary products of dextrose decomposition.

Finska Läkaresällskapets Handlingar, Helsingfors

70: 149-226 (March) 1928

Significance of Leukocyte Picture for Activity and Prognosis in Pulmonary Tuberculosis. A. von Bonsdorff.—p. 149.
*Can Gonorrhea Originate Without Infection with the Typical Organism? A. Cedercreutz.—p. 163.
*Action of Potassium Ions on Circulatory Organs. T. Packalén and R. Wirkberg.—p. 174.

Can Gonorrhea Originate Without Infection with the Gonococcus?—Cedercreutz observed three cases in which the manner of infection remained puzzling. The justifiability of regarding the gonococcus as a distinct entity is questioned, and more frequent detailed study and publication of baffling cases is urged. He does not reject the possibility that in exceptional cases gonorrhea might originate in ways other than through direct or indirect infection from a second person with gonorrhea.

Action of Potassium Ions on Circulatory Organs.—Packalén and Wirkberg's observations on intra-arterial injection of potassium in the rabbit fail to confirm Zondek's theory that potassium and the parasympathetic exert an identical action on the blood vessels. The effect of potassium often, perhaps more often, resembled the vasoconstricting action of the sympathetic nerves, but dilatation was so frequently evident in their experiments that no rule can be established.

Hygiea, Stockholm

90: 257-304 (April 15) 1928

Changes of Position in Inner Field of Vision Due to Impulses from Vestibular Apparatus. G. F. Göthlin.—p. 257.
*Etiology of Erythema Nodosum. M. Arborelius.—p. 265.

Etiology of Erythema Nodosum.—The eruption is regarded by Arborelius as a nonspecific reaction occurring in various infections, recent tuberculous infection predominating in childhood and youth, other infections of various kinds being the usual cause in older persons. He shows the compatibility of his view with the other present theories of the tuberculous and rheumatic origin of erythema nodosum and of its independent contagious nature. A case of erythema nodosum in acute typical polyarthritis is described.

Norsk Magazin for Lægevidenskapen, Oslo

89: 345-448 (April) 1928

Skiascopy. H. Schiötz.—p. 345.
Can Tumor of Ovary Transform Hen into Cock? O. Berner.—p. 349.
Some Newer Drugs in Dermatotherapy. K. Hansen.—p. 368.
*Angioma of Endometrium with Continued Uterine Hemorrhages. N. H. Brodersen.—p. 384.
Compulsive Ideas. J. Lofthus.—p. 388.
*Suture of Severed Brachial Artery. J. Holst.—p. 404.

Angioma of Mucous Membrane of Uterus with Continued Uterine Hemorrhages.—In Brodersen's patient, now aged 18, curettement of the mucous membrane of the uterus five times in two years on account of grave uterine bleeding gave good but temporary results each time. The exhaustion and anemia gradually increased, and a condition of grave anemia was reached. After treatment with iron, arsenic, and liver, supravaginal amputation of the uterus was done. Five weeks later the erythrocyte count had risen to 6,500,000. Examination of the extirpated uterus disclosed a dime-sized hemangioma in the fundus.

Suture of Severed Brachial Artery.—Holst reports a case of severed brachial artery and supracondylar fracture of the humerus with complete interruption of the circulation and ischemic contracture of the muscles of the forearm and hand. Suture thirty hours after the accident resulted in restoration of the circulation and marked hyperemia in the forearm and hand, lasting a week. This hyperemia is explained as similar to that following periarterial sympathectomy. He suggests that the rapid disappearance of the ischemic contracture may possibly be due to the rupture of the periarterial sympathetic fibers.

Ugeskrift for Læger, Copenhagen

90: 333-360 (April 12) 1928

Phrenicus Exeresis. J. Gravesen.—p. 333.
Basal Metabolism in Pulmonary Tuberculosis. T. V. Hyge.—p. 337.
Metal Salt Therapy in Pulmonary Tuberculosis. N. Lunde.—p. 341.
Lipase Stimulation in Tuberculosis. G. E. Tuxen.—p. 344.
*Course of Pulmonary Tuberculosis After Sanocrysin Treatment. Kjer-Petersen and V. Petersen.—p. 347.
Epinephrine Reaction and Vegetative Nervous System. A. Brems.—p. 348.

Course of Pulmonary Tuberculosis After Sanocrysin Treatment.—Kjer-Petersen and Petersen hold that the results in their material do not justify the assignment of any therapeutic value to sanocrysin. In their opinion, the earlier hope that sanocrysin would render tubercle bacillus carriers free from bacilli has been disappointed.